PROCEEDINGS

OF THE

MADRAS GOVERNMENT

IN THE

PUBLIC WORKS DEPARTMENT,

IRRIGATION BRANCH,

FOR THE

MONTH OF MAY 1894.

Printed by Authority.

MADRAS:
PRINTED BY THE SUPERINTENDENT, GOVERNMENT PRESS.

1894.

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GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

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GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.

READ—the following papers :—

From the Collector of Anantapur, dated 27th October 1893, No. 928.

From Colonel A. T. FRASER, R.E., Superintending Engineer, III Circle, to the Chief Engineer for Irrigation, dated Bellary, 22nd March 1894, No. 3231.

With reference to your memorandum No. III/8 A.N., dated 22nd November 1893, I have the honour to forward a sketch map showing the position of Halkur-Doddaghatta tank in the Madakasíra taluk with the following information :—

1. Source of supply ... ... Rainfed.
2. Name of group or system ... ... Wolsey tank group.
3. Name of supply channel if riverfed *Nil.*
4. Area ... ... 246 acres.
5. Revenue ... ... Rs. 1,553.

No. 61 I.

Submitted to Government with a recommendation that the Halkur-Doddaghatta tank, Madakasíra taluk, Anantapur district, be added to the list of "Minor Works for which neither Capital nor Revenue Accounts are kept, P.W.D.," communicated with G.O., No. 407 I., dated 6th July 1887—

Taluk.	No.	Source of supply.	Name of group or system.	Name of channel.	Name of tank.	Present irrigation.		Total of each group or system.	
						Area.	Revenue.		
						ACS.	RS.	ACS.	RS.
Madakasíra	89-A	Rainfed ..	Wolsey tank group.	..	Halkur-Doddaghatta tank.	246	1,553	246	1,553

MADRAS, 14th April 1894. (Signed) R. R. E. DRAKE-BROCKMAN, Lt.-Col., R.E., Chief Engineer for Irrigation.

To the Joint Secretary to Government,
Public Works Department, Irrigation Branch.

ORDER—dated 1st May 1894, No. 365 I., Public Works.

The proposal of the Chief Engineer for Irrigation is approved.

(True Extract.)

(Signed) R. R. E. DRAKE-BROCKMAN, Lt-Col., R.E.,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Superintending Engineer, III Circle.
" Chief Engineer for Irrigation.
" Examiner, Public Works Accounts.
" Revenue Department.

IRRIGATION.

Govt. of {1894} Madras.

PUBLIC WORKS.

Dated May, 1st.

Recd. *Encl.*

G.O., 1st May 1894, No. 365 I.

MAY.

Halkur-Doddaghatta Tank

The proposal of the Chief Engineer for Irrigation to add the —, Madakasira taluk, Anantapur district, to the list of "Minor Works for which neither Capital nor Revenue Accounts are kept, P.W.D.," approved.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

Read—the following papers :—

From A. C. SMITH, Esq., Executive Engineer, Kistna Eastern Division, to the Superintending Engineer, II Circle, dated 17th August 1893, No. 2559.

I have the honour to bring to your notice that much inconvenience is felt when inspecting the river banks owing to the want of rest-houses. As there are no metalled roads over which to carry tents in wet weather and no good camping places in which to pitch them in dry weather, I have therefore the honour to inquire whether you will be prepared to recommend for sanction estimates for rest-houses at Vallur, 13th mile, Sreekakulam, 22nd mile, and Avanigedda in Divi Island. I may mention that the sanctioned project estimates contain provision for four rest-houses, and estimates were called for three in your letter No. 1950 K.S., dated 13th November 1891, but when the Bank canal was abandoned no further action was taken.

No. 1295 K.S.

Forwarded to the Chief Engineer for Irrigation for orders.

2. It is most difficult to inspect the left flood bank of the Kistna river without at least one or two rest-houses.

(Signed) J. W. MARTIN,
Suptg. Engineer, II Circle.

29th August 1893.

To the Superintending Engineer, II Circle, dated 8th September 1893, No. 146 K.S.

From J. W. MARTIN, Esq., Superintending Engineer, II Circle, to the Chief Engineer for Irrigation, dated Bezwada, 12th February 1894, No. 2692 K.S.

With reference to your memorandum No. II/146 K.S., dated 8th September 1893, I have the honour to forward herewith, for your approval, plans and estimates noted below, and to request that you will be so good as to obtain the sanction of Government to the same :—

Rest-house at Vallur.
Do. at Sreekakulam.
Do. at Avanigedda.

2. The report which accompanies the estimate explains the necessity for the works.

Enclosure.

Report to accompany the estimates for constructing 2nd-class rest-houses at Vallur, Sreekakulam and Avanigedda.

Great inconvenience is felt at present in inspecting the Kistna left bank, as there are no proper roads, and during the rainy season it is sometimes impossible for carts to move.

It is at these times that the river bank requires inspection and the proposed rest-houses are very necessary.

The sites chosen, which are at the 17th, 28th and 42nd miles of the river measured from the anicut, are the most convenient for inspection purposes.

All work will be carried out in accordance with the standard specification.

(Signed) C. A. SMITH,
Ex. Engr., Eastern Division, Kistna.

17th January 1894.

No. 32 I.

Submitted to Government. The amounts of the estimates for the rest-houses at Avanigedda and Vallur have been increased in this office by Rs. 10 each owing to no provision having been made therein by the Superintending Engineer for demarcation stones.

(Signed) R. R. E. DRAKE-BROCKMAN, Lt.-Col., R.E.,
21st February 1894. Chief Engineer for Irrigation.

From the Executive Engineer, Kistna Eastern Division, to the Superintending Engineer, II Circle, dated 23rd March 1894, No. 6090.

With reference to your No. 2937 K.S., dated 7th March 1894, I have the honour to state that a watcher will be necessary for the Vallur rest-house, but it will be possible to arrange, if necessary, for the other two to be looked after by the river bank mile coolies. As, however, none of the compounds have any trees in them at present, it will be advisable to plant trees and keep a man at each rest-house to look after them for the first two or three years at any rate. The cost of each watchman will be Rs. 60 per annum.

No. 3182 K.S.

Forwarded to the Chief Engineer for Irrigation with reference to his No. 37 K.S., dated 28th February 1894.

(Signed) J. W. MARTIN,
31st March 1894. Suptg. Engineer, II Circle.

Order—dated 1st May 1894, No. 366 I., Public Works.

The following estimates are sanctioned:—

Irrigation.
43. Minor Works and Navigation.
Agricultural Works.
River Embankments.
Original Works.
Kistna Eastern Division.

		RS.
1.	Constructing a rest-house at Vallur	3,100
2.	Do. at Sreekakulam	3,030
3.	Do. at Avanigedda	3,120
	Total ...	9,250

2. This sanction is registered as No. 22 I. of 1894–95.

3. The proposal of the Superintending Engineer to plant trees and keep a watchman for two or three years at each rest-house is approved, but the Superintending Engineer should arrange as soon as possible to place the buildings in charge of the existing river bank maintenance establishment.

(True Extract.)

(Signed) R. R. E. DRAKE-BROCKMAN, Lt.-Col., R.E.,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Chief Engineer for Irrigation.
" Superintending Engineer, II Circle.
" Examiner, Public Works Accounts.
" Revenue Department.

IRRIGATION.
ACCOUNT.

Govt. of {1894} Madras.

PUBLIC WORKS.

Dated May, 1st.

Recd. *Encl.*

G.O., 1st May 1894, No. 366 I.

MAY.

Rest-houses

Estimate of Rs. 9,250 for constructing — at Vallur, Sreekakulam and Avanigedda in the Kistna Eastern division, sanctioned, and the proposal of the Superintending Engineer to plant trees and keep a watchman at each rest-house, approved with remarks.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

READ—the following papers :—

From the Executive Engineer, Nellore Division, to the Superintending Engineer, II Circle, dated 19th February 1894, No. 486.

I have the honour to request that you will be pleased to obtain the sanction of Government for an excess outlay of Rs. 318 incurred against the estimate for land compensation of Central channel under Capital Account of Sangam anicut system. The original estimate for the work was Rs. 1,300, which was, however, subsequently reduced to Rs. 1,078 in G.O., No. 881 I. of 28th October 1892 ; the actual outlay to end of September 1893 amounted to Rs. 1,396. The work was included in completion statement for October 1893 and was brought forward by the Examiner, Public Works Accounts, in the objectionable statement for August 1893 under excess over estimate.

No. 20 N.L.

Forwarded to the Chief Engineer for Irrigation for favour of obtaining the sanction of Government for the excess of Rs. 318 incurred against the estimate of Rs. 1,078 on account of compensation of Central channel sanctioned in G.O., No. 881 I., dated 28th October 1892, being met from the balance of unforeseen works of the Sangam anicut system.

2. Completion report has already been sent to the Examiner.

(Signed) J. W. MARTIN,
Suptg. Engineer, II Circle.

5th April 1894.

Office-note to the Examiner of Public Works Accounts, dated 12th April 1894, No. 101.
" from " " " " 16th " " " 1434.

ORDER—dated 2nd May 1894, No. 367 I., Public Works.

The Examiner of Public Works Accounts is authorized to pass the outlay incurred on account of compensation for land for the Central channel, Sangam anicut system, the excess of Rs. 318 being met from the balance available for unforeseen works, which will then be reduced to Rs. 2,505.

2. This sanction is registered as No. 19 I. of 1894-95.

(True Extract.)

(Signed) R. R. E. DRAKE-BROCKMAN, Lt.-Col., R.E.,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Chief Engineer for Irrigation.
" Superintending Engineer, II Circle.
" Examiner, Public Works Accounts.
" Revenue Department.

IRRIGATION.
ACCOUNT.

Govt. of {1894} Madras.

PUBLIC WORKS.

Dated May, 2nd.

Recd. *Encl.*

G.O., 2nd May 1894, No. 367 I.

MAY.

Excess outlay

The Examiner, Public Works Accounts, authorized to pass the — incurred on account of compensation for land for the Central channel, Sangam anicut system.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.

READ—the following paper :—

From N. F. MACKENZIE, Esq., Under Secretary to the Government of India, Public Works Department (Civil Works—Irrigation), to the Secretary to the Government of Madras, Public Works Department, dated Simla, 16th April 1894, No. 87 I.

I am directed to acknowledge the receipt of Proceedings of the Madras Government, No. 161 I., dated the 20th February 1894, forwarded with your No. 162 I. of the same date, embodying a statement showing by canals the works sanctioned under open canal capital rules, the sanctions to the estimates for which expired on or before the 31st March 1893.

2. I am to communicate the sanction of the Government of India to the extension up to 31st March 1894 of the date for completion of the works on the Gódávari delta system which require renewal of sanction as specified on page 4 of the Proceedings quoted above.

ORDER—dated 5th May 1894, No. 369 I., Public Works

Communicated to the officers concerned for information.

(True Extract.)

(Signed) R. R. E. DRAKE-BROCKMAN, Lt.-Col., R.E.,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Chief Engineer for Irrigation.
" Superintending Engineers.
" the Examiner, Public Works Accounts.
" the Revenue Department.

IRRIGATION.

Govt. of {1894} Madras.

PUBLIC WORKS.

Dated May, 5th.

Recd. *Encl.*

G.O., 5th May 1894, No. 369 I.

MAY.

Godavari Delta System

Government of India sanction to the extension up to 31st March 1894 of the date for completion of the works on the — which require renewal of sanction, communicated to the officers concerned.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.

READ—the following paper :—

Proceedings of the Board of Revenue (Revenue Settlement, Land Records and Agriculture), dated 23rd April 1894, No. 168.

Resolution—dated 23rd April 1894, No. 168.

Lower Coleroon anicut.
Shatiatope anicut.
Vriddhachalam anicut.
Pelandorai anicut.

The accompanying revised statistics of irrigation under the marginally-noted class II works for faslis 1301 (1891–92) and 1302 (1892–93) are submitted to Government, with reference to paragraph 2 of Board's Proceedings, dated 29th November 1892, Mis. No. 9087, reviewed in G.O., dated 13th April 1893, No. 332 I. The figures originally reported are also shown in these statements for easy reference and comparison. The variations in the results are chiefly owing to the revenue due to irrigation having been erroneously calculated in the accounts of fasli 1301 (1891–92) originally submitted by the Tahsildar. It will be seen that the anomaly in the figures of the Lower Coleroon anicut referred to in paragraph 4 of Board's Proceedings, dated 31st October 1893, No. 441, now disappears.

2. A supplemental statement of crops for fasli 1302 (1892–93) is also submitted with reference to paragraph 14 of the Chief Engineer's note embodied in G.O., dated 6th March 1894, No. 204 I.

(True Extract.)

(Signed) P. RAJARATNA MUDALIAR,
Secretary.

To the Joint Secretary to Government, Public Works Department (Irrigation Branch), with statements.

Copy to the Examiner, Public Works Accounts.

ENCLOSURES.

REVISED statement showing the total area occupied, the area actually irrigated or charged as irrigated, and the revenue derived from the following works for fasli 1301 (1891-92).

—	—	Area occupied. First crop.	Area occupied. Second crop.	Area actually irrigated or charged as irrigated. First crop.	Area actually irrigated or charged as irrigated. Second crop.	Total land and irrigation revenue.	Share due to irrigation.	Deduct remissions and deductions.	Net revenue due to irrigation.	—
		ACS.	ACS.	ACS.	ACS.	RS.	RS.	RS.	RS.	
Class II Works.										
Lower Coleroon anicut ..	1890-91	108,170	5,196	108,170	5,196	5,39,514	3,33,157	235	3,32,922	
	1891-92 (original) ..	175,968	4,721	105,466	4,719	5,69,217	3,77,391	980	3,76,411	
	Difference ..	− 2,202	− 475	− 2,704	− 477	+ 29,703	+ 44,234	+ 745	+ 43,489	
	1890-91	108,170	5,196	108,170	5,196	5,39,514	3,33,157	235	3,32,922	Revised.
	1891-92 (revised) ..	105,082	4,722	105,082	4,722	5,64,778	3,49,224	49	3,49,175	
	Difference ..	− 3,088	− 474	− 3,088	− 474	+ 25,264	+ 16,067	− 186	+ 16,253	
Shatiatope anicut ..	1890-91	26,908	3,711	26,907	3,711	1,36,555	77,659	6,846	70,813	
	1891-92 (original) ..	27,656	1,995	27,651	1,995	1,45,539	98,694	7,409	91,285	
	Difference ..	+ 748	− 1,716	+ 744	− 1,716	+ 8,984	+ 21,035	+ 563	+ 20,472	
	1890-91	26,908	3,711	26,907	3,711	1,36,555	77,659	6,846	70,813	Revised.
	1891-92 (revised) ..	27,825	2,013	27,825	2,013	1,43,832	95,189	71	95,118	
	Difference ..	+ 917	− 1,698	+ 918	− 1,698	+ 7,277	+ 17,530	− 6,775	+ 24,305	
Vriddhachalam anicut ..	1890-91	5,345	272	5,345	272	29,985	19,226	1,903	17,323	
	1891-92 (original) ..	5,850	265	5,850	265	34,366	22,379	1,838	20,541	
	Difference ..	+ 505	− 7	+ 505	− 7	+ 4,381	+ 3,153	− 65	+ 3,218	
	1890-91	5,345	272	5,345	272	29,985	19,226	1,903	17,323	Revised.
	1891-92 (revised) ..	5,880	226	5,880	226	33,999	22,173	775	21,398	
	Difference ..	+ 535	− 46	+ 535	− 46	+ 4,014	+ 2,947	− 1,128	+ 4,075	
Pelandorai anicut ..	1899-91	6,578	84	6,574	82	31,329	20,270	309	19,961	
	1891-92 (original) ..	8,193	91	7,972	91	40,989	27,540	833	26,707	
	Difference ..	+ 1,615	+ 7	+ 1,398	+ 9	+ 9,660	+ 7,270	+ 524	+ 6,746	
	1890-91	6,578	84	6,574	82	31,329	20,270	309	19,961	Revised.
	1891-92 (revised) ..	8,201	88	8,201	88	40,396	27,793	1,373	26,420	
	Difference ..	+ 1,623	+ 4	+ 1,627	+ 6	+ 9,067	+ 7,523	+ 1,064	+ 6,459	

REVISED statement showing the total area occupied, the area actually irrigated or charged as irrigated, and the revenue derived from the following works for fasli 1302 (1892-93).

—	—	Area occupied. First crop.	Area occupied. Second crop.	Area actually irrigated or charged as irrigated. First crop.	Area actually irrigated or charged as irrigated. Second crop.	Total land and irrigation revenue.	Share due to irrigation.	Deduct remissions and deductions.	Net revenue due to irrigation.	—
		ACS.	ACS.	ACS.	ACS.	RS.	RS.	RS.	RS.	
Class II Works.										
Lower Coleroon anicut ..	1891-92 (original) .. 1892-93 ..	105,968 106,934	4,721 4,283	105,466 106,934	4,719 4,283	5,69,217 5,74,119	3,77,391 3,55,495	980 112	3,76,411 3,55,383	
	Difference ..	+ 966	— 438	+ 1,468	— 436	+ 4,902	— 21,896	— 868	— 21,028	
	1891-92 (revised) .. 1892-93 ..	105,082 106,934	4,722 4,283	105,082 106,934	4,722 4,283	5,64,778 5,74,119	3,49,224 3,55,495	49 112	3,49,175 3,55,383	Revised.
	Difference ..	+ 1,852	— 439	+ 1,852	— 439	+ 9,341	+ 6,271	+ 63	+ 6,208	
Shatiatope anicut ..	1891-92 (original) .. 1892-93 ..	27,656 29,406	1,995 2,945	27,651 28,690	1,995 2,929	1,45,539 1,57,248	98,694 1,05,602	7,409 3,936	91,285 1,01,666	
	Difference ..	+ 1,750	+ 950	+ 1,039	+ 934	+ 11,709	+ 6,908	— 3,473	+ 10,381	
	1891-92 (revised) .. 1892-93 ..	27,825 29,406	2,013 2,945	27,825 28,690	2,013 2,929	1,43,832 1,57,248	95,189 1,05,602	71 3,936	95,118 1,01,666	Revised.
	Difference ..	+ 1,581	+ 932	+ 875	+ 916	+ 13,416	+ 10,413	+ 3,865	+ 6,548	
Vriddhachalam anicut ..	1891-92 (original) .. 1892-93 ..	5,850 5,525	265 211	5,850 4,649	265 207	34,366 31,816	22,379 20,591	1,838 5,033	20,541 15,558	
	Difference ..	— 325	— 54	— 1,201	— 58	— 2,550	— 1,788	+ 3,195	— 4,983	
	1891-92 (revised) .. 1892-93 ..	5,880 5,525	226 211	5,880 4,649	226 207	33,999 31,816	2,173 20,591	775 5,033	21,398 15,558	Revised.
	Difference ..	— 355	— 15	— 1,231	— 19	— 2,183	— 1,582	+ 4,258	— 5,840	
Pelandorai anicut ..	1891-92 (original) .. 1892-93 ..	8,193 8,971	91 101	7,972 8,377	91 101	40,989 45,913	27,540 31,622	833 4,794	26,707 26,828	
	Difference ..	+ 778	+ 10	+ 405	+ 10	+ 4,924	+ 4,082	+ 3,961	+ 121	
	1891-92 (revised) .. 1892-93 ..	8,201 8,971	88 101	8,201 8,377	88 101	40,396 45,913	27,793 31,622	1,373 4,794	26,420 26,828	Revised.
	Difference ..	+ 770	+ 13	+ 176	+ 13	+ 5,517	+ 3,829	+ 3,421	+ 408	

REVISED abstract statement of the extent of irrigation and the revenue derived from the following irrigation works for fasli 1301 (1891–92).

Class and names of systems.		Expected ultimate area of irrigation.	Area occupied.		Area actually irrigated or charged as irrigated.	
			First crop.	Second crop.	First crop.	Second crop.
1		2	3	4	5	6
Class VI Agricultural Works for which Capital and Revenue Accounts are kept.		ACS.	ACS.	ACS.	ACS.	ACS.
Lower Coleroon anicut	Original	Not fixed.	105,968	4,721	105,466	4,719
	Revised		105,082	4,722	105,082	4,722
Shatiatope do.	Original		27,656	1,995	27,651	1,995
	Revised		27,825	2,013	27,825	2,013
Vriddhachalam do.	Original		5,880	265	5,850	265
	Revised		5,850	226	5,880	226
Pelandorai do.	Original	7,541	8,193	91	7,972	91
	Revised	7,541	8,201	88	8,201	88

Class and names of systems.		Area of lands irrigated free of charge included in columns 3 and 4.		Total land and irrigation revenue.	Share due to irrigation.	Deduct remissions and deductions.	Net revenue due to irrigation.
		First crop.	Second crop.				
		7	8	9	10	11	12
Class VI Agricultural Works for which Capital and Revenue Accounts are kept.		ACS.	ACS.	RS.	RS.	RS.	RS.
Lower Coleroon anicut	Original	8,383	23	5,69,217	3,77,391	980	3,76,411
	Revised	7,985	..	5,64,778	3,49,224	49	3,49,175
Shatiatope do.	Original	1,727	18	1,45,539	98,694	7,409	91,285
	Revised	1,736	6	1,43,832	95,189	71	95,118
Vriddhachalam do.	Original	146	..	34,366	22,379	1,838	20,541
	Revised	146	..	33,999	22,173	775	21,398
Pelandorai do.	Original	433	..	40,989	27,540	833	26,707
	Revised	433	..	40,396	27,793	1,373	26,420

REVISED statement showing the financial results of irrigation under the following systems for fasli 1301 (1891–92).

Systems.	Area irrigated.						Direct receipts (water-rate exclusive of remissions).					
	First crop.			Second crop.			Usual wet.	Dry converted into wet and dry crops watered.	Waste brought under irrigation.	Zemindari.	Inams.	
	Old irrigation.	New irrigation.	Total.	Old irrigation.	New irrigation.	Total.					Irrigated free of charge.	Irrigated and charged.
1	2	3	4	5	6	7	8	9	10	11	12	13
	ACS.	ACS.	ACS.	ACS.	ACS.	ACS.	RS.	RS.	RS.		RS.	RS.
Lower Coleroon anicut	43,423	61,659	105,082	..	4,722	4,722	1,24,958	1,21,595	82,342	..	3,868	2,582
Shatiatope do.	7,304	20,521	27,825	6	2,007	2,013	18,749	44,183	23,723	..	575	1,097
Vriddhachalam do.	1,888	3,992	5,880	..	226	226	5,616	13,555	1,342	..	11	171
Pelandorai do.	2,070	6,131	8,201	88	..	88	4,012	19,940	49	..	163	1,778

Systems.	Direct receipts (water-rate exclusive of remissions)—*cont.*					Indirect receipts.					Total of columns 18 and 23.
	Second crop.	Miscellaneous.	Total irrigation revenue.	Deduct portion due to old irrigation.	Increase of revenue due to the outlay incurred.	Increment of land assessment due to irrigation.	Land assessment of waste land brought under irrigation.	Land revenue of miscellaneous items.	Four per cent. of the amount realized by sale of tank-bed lands.	Total.	
	14	15	16	17	18	19	20	21	22	23	24
	RS.	RS.	RS.	RS.	RS.		RS.	RS.		RS.	RS.
Lower Coleroon anicut	12,782	1,048	3,49,175	1,28,826	2,20,349	..	53,334	383	..	53,717	2,74,066
Shatiatope do.	6,010	781	95,118	19,324	75,794	..	13,524	412	..	13,936	89,730
Vriddhachalam do.	657	46	21,398	5,627	15,771	..	773	34	..	807	16,578
Pelandorai do.	229	249	26,420	3,000	23,420	..	26	100	..	126	23,546

SUPPLEMENTAL statement showing the total area actually irrigated by flow or lift under the following works and the quantity and value of crops raised thereon during 1892–93.

Name of system.	Area irrigated.						Area cultivated with different crops.	
	First crop.		Second crop.		Total.	Both seasons.	Paddy.	
	Flow.	Lift.	Flow.	Lift.			Extent.	Total outturn.
1	2	3	4	5	6	7	8	9
	ACS.	ACS.	ACS.	ACS.	ACS.	ACS.	ACS.	TONS.
Cheyár anicut	19,422	217	12,655	55	32,349	35	24,716	9,591
Alarudur anicut	* 14,493	* 336	* 10,638	* 200	* 25,667	589	21,262	6,862

Name of system.	Area cultivated with different crops—cont.								
	Paddy—cont.		Ragi.				Other crops.		
	Total value.	Value of average outturn per acre.	Extent.	Total outturn.	Total value.	Value of average outturn per acre.	Extent.	Value.	Value of average outturn per acre.
	10	11	12	13	14	15	16	17	18
	RS.	RS.	ACS.	TONS.	RS.	RS.	ACS.	RS.	RS.
Cheyár anicut	6,16,104	24·9	3,088	301	18,258	5·9	3,155	45,449	14·4
Alarudur anicut	4,93,289	23·2	208	20	1,446	7·0	3,053	20,446	6·7

* Revised.

NOTE.—(i) The area under "both seasons" is included under first and second crops.

(ii) The areas in columns 2 to 6 include extent under withered crops and exclude waste charged.

ORDER—dated 5th May 1894, No. 370 I., Public Works.

The revised figures of irrigation revenue derived from the Lower Coleroon, Shatiatope, Vriddhachalam and Pelandorai anicut systems during 1891–92 and 1892–93 as shown in the statements appended to the foregoing Proceedings of the Board of Revenue will be adopted by the Examiner of Public Works Accounts in preparing his administrative accounts for the past official year.

(True Extract.)

(Signed) R. R. E. DRAKE-BROCKMAN, Lt.-Col., R.E.,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Chief Engineer for Irrigation.
„ Superintending Engineer, V Circle.
„ Examiner, Public Works Accounts.
„ Revenue Department.

IRRIGATION.

Govt. of {1894} Madras.

PUBLIC WORKS.

Dated May, 5th.

Recd. *Encl.*

G.O., 5th May 1894, No. 370 I.

MAY.

Irrigation Revenue

The revised figures of — derived from the Lower Coleroon, Shatiatope, Vriddhachalam and Pelandorai anicut systems during 1891–92 and 1892–93 as shown in the Board's Proceedings, ordered to be adopted by the Examiner, Public Works Accounts, in preparing his administrative accounts for the past official year.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

READ—the following paper :—

From A. S. RUSSELL, Esq., Executive Engineer, in charge office of Superintending Engineer, II Circle, to the Chief Engineer for Irrigation, dated Madras, 10th April 1894, No. 47 N.L.

I have the honour to forward herewith, for your approval and sanction of Government, revised estimate, with comparative statement, amounting to Rs. 8,890, for Vasili flood embankment in the Nellore division, the original estimate of which, amounting to Rs. 6,500, was sanctioned in G.O., No. 533 I., dated 1st July 1891.

2. The report which accompanies the estimate explains the necessity for the revision of the estimate.

ENCLOSURE.

REPORT to accompany the revised estimate for Vasili flood embankment in Nellore division.

	RS.
Amount of revised estimate	8,890
Amount of original estimate	6,500

This estimate provides for building six sluices in addition to those already built, as these have been found necessary to pass irrigation water to the wet lands of Atmakúru tank lying east of the embankment.

It also provides for closing the breaches that were lately caused by the water from the Atmakúru tank breach, repairing and turfing the bank and gravelling the cattle crossings, &c.

(Signed) C. H. D. MARJORIBANKS,
Executive Engineer, Nellore Division.

12th March 1894.

ORDER—dated 5th May 1894, No. 371 I., Public Works.

The following revised estimate is sanctioned in lieu of the estimate of Rs. 6,500 sanctioned in G.O., No. 533 I., dated 1st July 1891 :—

Irrigation.
43. Minor Works and Navigation.
Minor Works for which neither Capital nor Revenue Accounts are kept, P.W.D.
Original Works.
Nellore Division.
Vasili tank, No. 114 of list of works appended to G.O., No. 407 I., dated 6th July 1887.

	RS.
Constructing flood embankment, estimate	8,890

2. This sanction is registered as No. 23 I. of 1894-95.

(True Extract.)

(Signed) R. R. E. DRAKE-BROCKMAN, Lt.-Col., R.E.,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Chief Engineer for Irrigation.
„ Superintending Engineer, II Circle, with two enclosures.
„ Examiner, Public Works Accounts.
„ Revenue Department.

IRRIGATION.
ACCOUNT.

Govt. of {1894} Madras.

PUBLIC WORKS.

Dated May, 5th.

Recd. *Encl.*

G.O., 5th May 1894, No. 371 I.

MAY.

Vasili Tank, Nellore Division

Revised estimate of Rs. 8,890 for constructing flood embankment to —, sanctioned.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

Read—the following paper :—

From J. C. LARMINIE, Esq., Superintending Engineer, V Circle, to the Chief Engineer for Irrigation, dated Chepâk, 16th April 1894, No. 145 E.I.

I have the honour to submit, for sanction of Government, enclosed estimate of Rs. 3,080, with accompaniments as per margin, for improvements to Oossi Voikal to supplement the supply in the Pudumaniyar channel in Tanjore division.

1 Survey of South Rajen and Oossi Voikals.
3 Sheets of levels.
1 Report.
1 General abstract estimate.
1 Plan of culvert.
1 " of head sluice.
1 " of weir.
1 " of aqueduct.

2. The plan and estimate have been revised on the lines indicated in paragraphs 2 and 3 of your memo. No. V/55 T.J. of 9th June 1893.

Enclosure.

Report to accompany the revised estimate for improving Oossi Voikal to supplement Pudumaniyar supply.

	RS.
Amount of estimate	3,080

The accompanying estimate is revised according to the Chief Engineer's instructions communicated by the Superintending Engineer with his No. 9 T.J./C., dated 17th June 1893. The new head of Oossi Voikal is now proposed to be placed at C. S. No. 4 near where the Panankkattangudy channel takes off from South Rajen Voikal with the new head of Panankkattangudy channel at its bend between C. S. Nos. 11 and 12 (at the point marked thus * in the survey). The Oossi Voikal will thus be common to both the channels—Panankkattangudy and Oossi Voikals—up to this point.

2. As banks are now only raised 2 feet above M.F.L., the provision of earth compensation made in the original estimate is omitted.

3. Work will be carried out as per standard specification of the Public Works Department.

(Signep) G. B. LAMBERT,
Ex. Engr., Tanjore Division.

ORDER—dated 5th May 1894, No. 372 I., Public Works.

The following estimate is sanctioned :—

Irrigation.
43. Minor Works and Navigation.
Minor Works for which Capital and Revenue Accounts are kept.
Capital Account.
Lower Coleroon Anicut System.
3. Distributaries.
South Rajen Voikal.
Improvements to Oossi Voikal.

	RS.
I. Works—	
2. Land	546
4. Earthwork	2,534
	3,080
II. Establishment	583
III. Tools and plant	37
Total Estimate ...	3,700

This sanction is registered as No. 24 I. of 1894–95.

(True Extract.)

(Signed) R. R. E. DRAKE-BROCKMAN, Lt.-Col., R.E.,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Chief Engineer for Irrigation.
,, Superintending Engineer, V Circle, with nine enclosures.
,, Examiner, Public Works Accounts.
,, Revenue Department.

IRRIGATION.
ACCOUNT.

Govt. of {1894} Madras.

PUBLIC WORKS.

Dated May, 5th.

Recd. *Encl.*

G.O., 5th May 1894, No. 372 I.

MAY.

Lower Coleroon Anicut System

Estimate of Rs. 3,700 for improvements to Oossi Voikal, South Rajen Voikal, —, sanctioned.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.

READ—the following paper :—

From G. D. WYBROW, Esq., Superintending Engineer, I Circle, to the Chief Engineer for Irrigation, dated Dowlaishweram, 14th April 1894, No. 87 G.N.

I have the honour to bring to your notice that the Executive Engineer, Ganjám Division, submitted an estimate for Rs. 200 for "Improvements to Jagannathapalli Komma channel to irrigate the lands of Devabhumi in Aska estates" in the Ganjám division. The Devabhumi estate is not under the Court of Wards, and the Collector has written to say that the proprietor is willing to pay his share of the cost of the work in question.

2. The work is intended to regulate the supply of water to both estates, the water being divided by means of a dividing dam in the proportion of ten parts to Devabhumi and six parts to Aska.

3. As the estimate is for a work under the Court of Wards and in order to utilize the allotment before the end of the last official year, I ordered the Executive Engineer to proceed with the work in anticipation of sanction to the estimate.

4. I therefore request that you will be good enough to obtain the sanction of Government to the contribution work in question being executed by this department under paragraph 78, chapter IX of the Public Works Code.

ORDER—dated 8th May 1894, No. 374 I., Public Works.

The execution of the work referred to by the Public Works Department is sanctioned.

(True Extract.)

(Signed) R. R. E. DRAKE-BROCKMAN, Lt.-Col., R.E.,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Chief Engineer for Irrigation.
„ Superintending Engineer, I Circle.
„ Examiner, Public Works Accounts.
„ Revenue Department.

IRRIGATION.

Govt. of {1894} Madras.

PUBLIC WORKS.

Dated May, 8th.

Recd. *Encl.*

G.O., 8th May 1894, No. 374 I.

MAY.

Jagannathapalli Komma Channel

The execution of improvements to — to irrigate the Devabhumi and Aska estates in the Ganjám division by the Public Works Department, sanctioned.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.

READ—the following paper :—

From J. C. LARMINIE, Esq., Superintending Engineer, V Circle, to the Chief Engineer for Irrigation, dated Shiyáli, 10th April 1894, No. 139 E.I.

With this office No. 73 E.I., dated 3rd March 1894, an estimate, amounting to Rs. 5,000, was submitted for your sanction for raising the embankments of the Cauvery river from Máyavaram up to Road No. 81 in Kumbakónam.

2 Further consideration of the conditions of these Tanjore rivers induces me to strongly question the advisability of raising the banks even to a level high enough to carry (theoretically) a flood as high as that of 1892 (the highest recorded), for it must be remembered that many of these rivers, and notably the Cauvery, contract greatly in width as they approach the sea and that this contraction has been considerably aggravated of late years by the encroachments of the cultivators along the margins, who do all in their power to seize and extend every accretion that forms.

3. Consequently it is quite impossible now for the rivers to dispose of flood waters as effectually as they did twenty years ago (or even ten years ago), and the result is that they must top their banks and spill, when the higher the banks the greater will be the damage ; for it will hardly be possible to bank a river like the Cauvery, along its lower reaches, to an extent sufficient to enable it to carry all the water that has to be disposed of, even allowing for the draw of its effluents, which have also been encroached on, *e.g.*, a very important one, the Virasholenar, is, along its lower reaches, reduced to the size of an irrigation channel.

4. In a similar connection I have the honour to forward for your disposal an estimate, amounting to Rs. 3,840, for fitting screw shutters to the Kiranur dam on the Nundalar drain. It is shown by calculation that the results to be expected will be a lowering of the M.F.L. above the dam by *one* foot and that if this is not attained the banks of the drain should be raised.

5. The latter should not, in any case in my opinion, be done, and it is a question if for the sake of one foot of reduction of M.F.L. it is worth expending Rs. 3,800.

6. It is a great pity that the system of dams was ever allowed in the Tanjore drains, the cultivation therefrom is admittedly inferior and the general drainage must be considerably impaired.

ENCLOSURE.

REPORT to accompany the estimate for altering Kiranur dam across Nundalar.

	RS.
Amount of estimate	3,840

The Kiranur dam across Nundalar (constructed in 1886) has a body wall 3½ feet high above bed of river. It considerably obstructs the free flow of floods causing frequent and troublesome breaches in the upper reaches of the river above the dam. As this is purely a drainage stream and as all land drainages on both sides of it should find their way into it without obstruction, it has not been considered advisable to strongly bank the river on both its sides, and

instead it is found necessary to reduce to a minimum the extent of obstruction to floods caused by the various dams across it. With this object proposals are submitted to alter the Kiranur dam by removing the whole of the blocking body wall and opening it into a number of vents fitted with screw gearing shutters to the level of the full supply required for the irrigation under the channel taking off at the dam as per drawings on the accompanying plan. The M.W.L. or M.F.L. is retained at what it was before the construction of the dam in 1886.

(Signed) T. T. RAGHAVACHARI,
Sub-Engineer.

31st December 1892.

There have been no cyclonic rains since the construction of the dam, and yet the flood last August was 6 inches higher than that of 1880 (November). In the former case only 8 inches of rain were registered in the month, whilst in the latter 33 inches were recorded.

(Signed) G. B. LAMBERT,
Executive Engineer.

24th January 1893.

No. 65 I.

Submitted to Government. The undersigned does not think any valid reason has been shown for either raising the Cauvery banks or conversion of the Kiranur dam.

(Signed) R. R. E. DRAKE-BROCKMAN, Lt.-Col., R.E.,
Chief Engineer for Irrigation.

30th April 1894.

Order—dated 9th May 1894, No. 375 I., Public Works.

The Government concurs in the opinion expressed by the Chief Engineer for Irrigation. The sanction accorded in G.O., No. 327 I., dated 10th April 1894, to the estimate of Rs. 5,000 for raising and strengthening both banks of the Cauvery from Road No. 81 in Kumbakónam taluk to the South Indian Railway bridge at Máyavaram is cancelled.

(True Extract.)

(Signed) R. R. E. DRAKE-BROCKMAN, Lt.-Col., R.E.,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Chief Engineer for Irrigation.
„ Superintending Engineer, V Circle, with five enclosures.
„ Examiner, Public Works Accounts.
„ Revenue Department.

IRRIGATION.

Govt. of {1894} Madras.

PUBLIC WORKS.

Dated May, 9th.

Recd. *Enct.*

G.O., 9th May 1894, No. 375 I.

MAY.

The banks of the Cauvery

The sanction accorded in G.O., No. 327 I., dated 10th April 1894, to the estimate of Rs. 5,000 for raising and strengthening — from Road No. 81 in Kumbakónam taluk to the South Indian Railway bridge at Máyavaram, cancelled.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

READ—the following papers :—

From the Executive Engineer, Kistna Western Division, to the Superintending Engineer, II Circle, dated 15th February 1894, No. 690 S.

I have the honour to forward herewith a revised plan and estimate, amounting to Rs. 2,330,* for constructing a sluice to Nadigedda tank irrigation channel for sanction.

* Corrected in Superintending Engineer's office to Rs. 2,250.

2. As originally designed, the sill was at too low a level, being good deal below the tank bed level.

No. 2911 K.S.

Forwarded to the Chief Engineer for Irrigation in charge Tank Restoration Scheme for favour of sanction.

2. A deviation statement in connection with the Dondapad tank works has already been approved by him in his No. II/167 K.S., dated 19th August 1892.

(Signed) J. W. MARTIN,
Superintending Engineer, II Circle.

3rd March 1894.

To the Superintending Engineer, II Circle, dated 15th March 1894, No. 50 K.S.
From the " " " " 31st " " " 3181 K.S.

No. 66 I.

Submitted to Government. The design for the proposed sluice has been modified in this office with the result that the amount of the estimate has been reduced from Rs. 2,250 to Rs. 1,500.

2. The Superintending Engineer should satisfy himself that the depth of foundation allowed in the estimate is sufficient, viz., 2 feet 6 inches against a depth of 2 feet allowed in the original estimate. The usual information regarding nature of soil should have been given on the plan.

(Signed) R. R. E. DRAKE-BROCKMAN, Lt.-Col., R.E.,
Chief Engineer for Irrigation.

27th April 1894.

ORDER—dated 9th May 1894, No. 376 I., Public Works.

The following estimate is sanctioned in lieu of the provision of Rs. 1,991 made for the work in the deviation statement approved by the Chief Engineer for Irrigation in his memorandum No. II/167 K.S., dated 19th August 1892 :—

Irrigation.
43. Minor Works and Navigation.
Minor works for which Capital and Revenue accounts are kept.
Capital Account.
Dondapad Tank Project.
I. Works.
3. Distributaries.
3. Works.

	RS.
Constructing a sluice to Nadigedda tank irrigation channel, estimate ...	1,500

2. This sanction is registered as No. 25 I. of 1894–95.

(True Extract.)

(Signed) R. R. E. DRAKE-BROCKMAN, Lt.-Col., R.E.,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Chief Engineer for Irrigation.
,, Superintending Engineer, II Circle, with ten enclosures.
,, Examiner, Public Works Accounts.
,, Revenue Department.

IRRIGATION.
ACCOUNT.

Govt. of {1894} Madras.

PUBLIC WORKS.

Dated May, 9th.

Recd. *Encl.*

G.O., 9th May 1894, No. 376 I.

MAY.

Sluice

Estimate of Rs. 1,500 for constructing a — to Nadigedda tank irrigation channel, Dondapad tank project, sanctioned with remarks.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.

READ—the following paper :—

From N. F. MACKENZIE, Esq., Under Secretary to the Government of India, Public Works Department (Civil Works—Irrigation), to the Secretary to the Government of Madras, Public Works Department, dated Simla, 26th April 1894, No. 94 I.

I am directed to acknowledge the receipt of Proceedings of the Madras Government, No. 155 I., dated the 19th February 1894 (copy forwarded under your No. 156 I. of the same date), and, in reply, to communicate the formal sanction of the Government of India to the schedule of works remaining to be carried out on the Pelandorai anicut system at the end of 1892–93 amounting to Rs. 2,840.

2. I am to take this opportunity of pointing out that, under the rules contained in Public Works Department Code, volume II, chapter XV, paragraph 181 B., clause V (*b*), the Government of Madras are competent to sanction the schedule of works of the Pelandorai anicut system, as well as of other Minor Irrigation Works in the Madras Presidency which are now classed as Provincial, so long as the aggregate cost of each project does not exceed 12½ lakhs of rupees including establishment and tools and plant charges.

ORDER—dated 9th May 1894, No. 378 I., Public Works.

Communicated to the officers concerned with reference to G.O., No. 155 I., dated 19th February 1894.

(True Extract.)

(Signed) R. R. E. DRAKE-BROCKMAN, Lt.-Col., R.E.,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Chief Engineer for Irrigation.
" Superintending Engineer, V Circle.
" Examiner, Public Works Accounts.
" Revenue Department.

IRRIGATION.

Govt. of {1894} Madras.

PUBLIC WORKS.

Dated May, 9th.

Recd. *Encl.*

G.O., 9th May 1894, No. 378 I.

MAY.

Pelandorai Anicut System

Letter from the Government of India sanctioning the schedule of works required to be carried out to complete the —, and pointing out that the Madras Government are competent to sanction the schedule of works of all such Minor Irrigation Works now classed as Provincial so long as the aggregate cost of each project does not exceed 12½ lakhs of rupees, communicated to officers concerned.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

Read—the following paper :—

From C. H. D. MARJORIBANKS, Esq., Executive Engineer, Nellore Division, to the Superintending Engineer, II Circle, dated 10th April 1894, No. 22 S.E.

With reference to your No. 780 N.L. of 3rd March 1894, I have the honour to forward herewith an estimate for Rs. 1,705 for compensation for lands which have been taken up for Survapalli canal improvements, and to request that you would be good enough to obtain the sanction of Government for the same under "Open Capital Account," Penner anicut system, with reference to paragraph 156 A, chapter XV, volume II, India Code.

2. The estimate may, I think, be classified under [see clause (c) of the above paragraph] "Works which are necessary for the full development of a project but which are not in themselves directly remunerative."

Enclosure.

Report to accompany the estimate for compensation for lands taken up for Survapalli canal improvements.

The estimate provides for all known claims of compensation for lands taken up for improvements of the Survapalli canal which could not be settled before the construction estimate of the project was closed.

2. The valuation of land has been fixed by the Collector and the high rate of compensation seems to be chiefly due to the lands being "house sites."

(Signed) C. H. D. MARJORIBANKS,
Executive Engineer, Nellore Division.

No. 64 N.L.

Forwarded to the Chief Engineer for Irrigation for favour of obtaining the sanction of Government.

(Signed) A. S. RUSSELL,
Ex. Engr., in charge II Circle.

24th April 1894.

Order—dated 11th May 1894, No. 382 I., Public Works.

The following estimate is sanctioned :—

Capital Expenditure not charged to Revenue.
49. Irrigation.
Penner Anicut System.
Open Capital Account.
I. Works.
2. Main Canals and Branches.
Survapalli Canal.
2. Land.
Unremunerative Work.

	RS.
Compensation for land, estimate	1,705

2. This sanction is registered as No. 26 I. of 1894-95 and will expire on the 31st March 1896.

3. Ordered that a copy of these Proceedings be forwarded to the Government of India for information.

[Here enter No. 383 I., dated 11th May 1894.]

(True Extract.)

(Signed) R. R. E. DRAKE-BROCKMAN, Lt.-Col., R.E.,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Chief Engineer for Irrigation.
" Superintending Engineer, II Circle, with one estimate.
" Examiner, Public Works Accounts.
" Revenue Department.

Endorsement—dated 11th May 1894, No. 383 I., Public Works.

Forwarded.

(By Order.)

(Signed) R. R. E. DRAKE-BROCKMAN, Lt.-Col., R.E.,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

IRRIGATION.
ACCOUNT.

Govt. of {1894} Madras.

PUBLIC WORKS.

Dated May, 11th.

Recd. *Encl.*

G.O., 11th May 1894, Nos. 382, 383 I.

MAY.

Land

Forwarding Proceedings sanctioning estimate of Rs. 1,705 for compensation for — for Survapalli canal, Penner anicut system.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

READ—the following papers :—

From C. H. D. MARJORIBANKS, Esq., Executive Engineer, Nellore Division, to the Superintending Engineer, II Circle, dated 22nd March 1894, No. 568 S.E.

In continuation of this office No. 560 S.E., dated 21st March 1894, I have the honour to forward, herewith, an estimate for Rs. 291 for compensation paid for land temporarily taken up for brickfields and lime-kilns at Sangam by Revenue Department, and request sanction may be accorded from the provision for unforeseen works under 49. Capital Expenditure, Sangam anicut system.

2. The outlay was adjusted in Public Works accounts for August 1893, and has been separately treated in accounts as the estimate of Rs. 4,390 sanctioned in G.O., No. 781 I., dated 16th September 1892, was closed and completion report sent in for Rs. 4,050 on 30th January 1893.

ENCLOSURE.

REPORT to accompany the estimate for filling up pits in the land temporarily taken up for brickfields and lime-kilns at Sangam.

The estimate provides compensation for the loss of produce and trees awarded by the Collector of Nellore in award statement No. 5 of 12th March 1892.

NELLORE,
8th March 1894.

(Signed) C. H. D. MARJORIBANKS,
Executive Engineer, Nellore Division.

No. 41 N.L.

Forwarded to the Chief Engineer for Irrigation in continuation of this office No. 20, dated 5th April 1894, for favour of obtaining the sanction of Government to the estimate, amounting to Rs. 291, on account of compensation for land taken up temporarily for brickfields and lime-kilns at Sangam under the circumstances explained by the Executive Engineer.

13th April 1894.

(Signed) A. S. RUSSELL,
Executive Engineer in charge II Circle.

Office-note to the Examiner, Public Works Accounts, dated 20th April 1894, No. 109.

Please say if the estimate appended to the Superintending Engineer's endorsement provides for the outlay actually incurred and adjusted in the accounts for August 1893.

Office-note from the Examiner, Public Works Accounts, dated 25th April 1894, No. 1594 D.

The expenditure of Rs. 291 or Rs. 290–8–9 referred to by the Superintending Engineer was charged in the divisional accounts for August 1893 to the estimate of Rs. 1,078 sanctioned in G.O., No. 881 I. of 28th October 1892 for "Central channel compensation," and a completion report for Rs. 1,395–11–6 was received for the work. This outlay was written back in the accounts for March 1894 and charged to the work "filling pits in the land temporarily taken up for "brickfields and lime-kilns."

2. The Executive Engineer promises to send a revised completion report for the outlay as it stands against the estimate of Rs. 1,078.

ORDER—dated 11th May 1894, No. 384 I., Public Works.

The Examiner of Public Works Accounts is authorized to pass the outlay reported to have been incurred in payment of compensation for land temporarily taken up for brickfields and lime-kilns, the expenditure of Rs. 291 being met from the balance of the amount reserved for unforeseen works of the Sangam anicut system which will then be reduced to Rs. 2,214.

2. This sanction is registered as No. 28 I. of 1894–95.

(True Extract.)

(Signed) R. R. E. DRAKE-BROCKMAN, Lt.-Col., R.E.,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Chief Engineer for Irrigation.
„ Superintending Engineer, II Circle, with enclosures.
„ Examiner, Public Works Accounts.
„ Revenue Department.

IRRIGATION.
ACCOUNT.

Gobt. of {1894} Madras.

PUBLIC WORKS.

Dated May, 11th.

Recd. *Encl.*

G.O., 11th May 1894, No. 384 I.

MAY.

Compensation for Land

The Examiner authorized to pass outlay of Rs. 291 reported to have been incurred in payment of — temporarily taken up for brickfields and lime-kilns at Sangam, Nellore division.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

Read—the following paper :—

From J. C. LARMINIE, Esq., Superintending Engineer, V Circle, to the Chief Engineer for Irrigation, dated Chepâk, 17th April 1894, No. 149 E.I.

With reference to your memorandum No. V/32 T.J., dated 29th March 1894, I have the honour to forward the enclosed estimate of Rs. 344 (with survey) for the proposed leading channel to the Karuppur sluice.

The Executive Engineer states that the mirasidars interested have paid into the treasury Rs. 134 as their contribution for the work.

Enclosure.

Report to accompany the estimate for excavating a new leading channel from the river Kodamurty to the Karuppur head sluice.

	RS.
Amount of estimate	340

The present leading channel of the Karuppur head sluice takes off from the sandy ridge in Kodamurty river. On account of the action of the river in washing the sand into the channel, which is always being silted up, the mirasidars who own lands under it suffer much and complain of the defective supply. Besides another reason why supply is defective is that there is a curve in the river opposite the mouth of the present leading channel and that the water tends to keep up the deep bed only on the opposite side. To relieve the mirasidars from their present difficulty it is proposed and provided for in the accompanying estimate to take the leading channel right across the Eluppa tope from a point higher up and very near the mouth of Vadagal channel where, on account of the bend, the river is moderately deep.

The land required for the digging of the channel will be acquired at the cost of Government. The cost of excavation, &c., will be borne by the interested mirasidars.

Work will be done according to the standard specification of the Public Works Department.

(Signed) J. C. JOHNSTON,
Ex. Engr., Tanjore Division.

12th April 1894.

No. 67 I.

Submitted to Government. The amount of the estimate has been reduced in this office to Rs. 340.

(Signed) R. R. E. DRAKE-BROCKMAN, Lt-Col., R.E.,
Chief Engineer for Irrigation.

4th May 1894.

Order—dated 11th May 1894, No. 385 I., Public Works.

The following estimate is sanctioned, Rs. 134 of the proposed outlay being met from contributions from the mirasidars interested in the execution of the work :—

Irrigation.
42. Major Works (Working Expenses).
Cauvery Delta System.
Extensions and Improvements.
3. Distributaries.
Kodamurty River.
4. Earthwork.

	RS.
Excavating leading channel to Karuppur head sluice, estimate ...	340

2. This sanction is registered as No. 27 I. of 1894–95.

(True Extract.)

(Signed) R. R. E. DRAKE-BROCKMAN, Lt.-Col., R.E.,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Chief Engineer for Irrigation.
" Superintending Engineer, V Circle, with three enclosures.
" Examiner, Public Works Accounts.
" Revenue Department.

IRRIGATION.
ACCOUNT.

Govt. of {1894} Madras.

PUBLIC WORKS.

Dated May, 11th.

Recd. *Encl.*

G.O., 11th May 1894, No. 385 I.

MAY.

Channel

Estimate of Rs. 340 for excavating leading — to Karuppur head sluice, Kodamurty river, Cauvery delta system, sanctioned with remarks.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.

READ—the following papers :—

Endorsement from the Superintending Engineer, V Circle, to the Executive Engineer, Negapatam, dated 3rd April 1894, No. 62 N.G./C.

The Vellayar-Chittar head being only about 6 miles south of Tiruválúr (where there is a travellers' bungalow) and 1 mile from the railway, a bungalow is not there required.

It will be much more useful if built at Muttupet, and arrangements should be made accordingly; a site has been selected.

No. 134 E.I.

To the Chief Engineer for Irrigation for information with reference to G.O., No. 215 I., dated 8th March 1894.

NEGAPATAM,
3rd April 1894.

(Signed) J. C. LARMINIE,
Suptg. Engineer, V Circle.

No. V/41 T.J.

MEMORANDUM.

With reference to endorsement No. 134 E.I., dated 3rd April 1894, from the Superintending Engineer, V Circle, the undersigned has the honour to remark that the place at which it will be useful to construct an inspection shed ought to have been considered in sending in the first estimate.

The reasons for placing the shed at Muttupet and the position of this place with reference to the Vellayar-Chittar head should be intimated.

(Signed) R. R. E. DRAKE-BROCKMAN, Lt.-Col., R.E.,
Chief Engineer for Irrigation.

17th April 1894.

To the Superintending Engineer, V Circle.

From J. C. LARMINIE, Esq., Superintending Engineer, V Circle, to the Chief Engineer for Irrigation, dated Chepâk, 21st April 1894, No. 162 E.I.

In reference to your memorandum No. V/41 T.J., dated 17th instant, I have the honour to state that the question of sites for inspection sheds had been under consideration both before and after the submission of the estimate in question; the Vellayar-Chittar was one of the places originally proposed and the name was allowed

to stand subject, as reported, to alteration. A tracing is now forwarded (to be returned) showing the position of Muttupet. The reasons for proposing that locality are—

There are no bungalows of any kind anywhere in the neighbourhood from which the numerous rivers and drains can be inspected, which flow into the sea between it and Point Calimere.

There are no inspection bungalows between this place and Negapatam, Koradá-chéri or Koriar head.

Muttupet is now the railway terminus and is on the line of route for the Pattukkóttai tank system.

ORDER—dated 11th May 1894, No. 386 I., Public Works.

In the circumstances stated, the proposal to construct an inspection shed at Muttupet instead of at Vellayar-Chittar head as sanctioned in G.O., No. 215 I., dated 8th March 1894, is approved.

2. Ordered that a copy of these Proceedings be forwarded to the Government of India for information.

[Here enter No. 387 I., dated 11th May 1894.]

(True Extract.)

(Signed) R. R. E. DRAKE-BROCKMAN, Lt.-Col., R.E.,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Chief Engineer for Irrigation.
,, Superintending Engineer, V Circle, with one plan.
,, Examiner, Public Works Accounts.
,, Revenue Department.

ENDORSEMENT—dated 11th May 1894, No. 387 I., Public Works.

Forwarded.

(By Order.)

(Signed) R. R. E. DRAKE-BROCKMAN, Lt-Col., R.E.,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

IRRIGATION.

Govt. of {1894} Madras.

PUBLIC WORKS.

Dated May, 11th.

Recd. *Encl.*

G.O., 11th May 1894, Nos. 386, 387 I.

MAY.

Inspection shed at Muttupet

Forwarding copy of Proceedings approving the proposal to construct an — instead of at Vellayar-Chittar head as sanctioned in G.O., No. 215 I., dated 8th March 1894.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.

READ—the following papers :—

From the Chief Secretary to the Government of Fort St. George, to the Resident at Hyderabad, dated 27th May 1893, No. 328, Political.

I am directed to acknowledge the receipt of your letter No. 2818, dated 16th April 1892, on the subject of the water-supply to the Lingasamudram tank. This reference arises from a dispute regarding the interference by one M. Butchia with a source of supply to the Lingasamudram tank, No. 64 in the list of Minor Works, Public Works Department, Gódávari district, by restoring and enlarging a private tank called Subbakunta in His Highness the Nizam's territory. The Subbakunta tank, after being abandoned for many years, was in or about 1880 leased to M. Butchia by His Highness the Nizam's Government for an annual rent of Rs. 75. At this time there was a gap in the tank bund through which the water flowed to the Lingasamudram tank. M. Butchia closed this gap and repaired the tank, raising and extending the bund by degrees until it is now 1,376 feet long instead of 670 feet and is 7 feet higher than before. By this action the whole of the water-supply from a catchment area of 2 square miles is intercepted and prevented from flowing into the Lingasamudram tank until such time as the Subbakunta tank is full. Consequently the lands under Lingasamudram are deprived of a proportion of the water-supply to which they have or had a right. It appears, however, to be too late to object to the restoration of the tank; but the restoration should, this Government considers, be confined to reasonable limits, which, from the following figures, does not appear to be the case at present. The present area of the waterspread of Subbakunta is stated to be 80 acres, or 3,484,800 square feet, and it irrigates 7 acres in His Highness the Nizam's territory and 19 acres in the Gódávari district, which latter appear to be held on dry assessment only. The quantity of water required for one acre, at the rate of 2 cubic yards per acre per hour, is, for a crop of 180 days, 233,280 cubic feet, and the storage required for one acre may be taken as two-thirds of this quantity or 155,520 cubic feet. Therefore for 7 and 19 acres the storage required is 1,088,640 cubic feet and 2,954,880 cubic feet, respectively, or a total storage of 4,043,520 cubic feet if the 19 acres in the British territory are converted into wet. The average depth of water required in the Subbakunta tank corresponding to a waterspread of 80 acres is, therefore, $\frac{4,043,520}{3,484,800} = 1{\cdot}16$, say $1\frac{1}{6}$ feet. The actual depth of water is, however, said to be 6 feet and therefore it seems evident that considerably more water is being stored in the Subbakunta than is required, and the increase in depth and area of waterspread which has taken place is not reasonable.

2. I am directed to request that an arrangement with His Highness the Nizam's Government may be suggested whereby the wet cultivation under the Subbakunta tank may be limited to the present extent, viz., 7 acres in His Highness the Nizam's territory and 19 acres in British territory, on payment of the usual wet assessment and on condition that the F.T.L. of the Subbakunta tank is fixed to the satisfaction of both Governments at such a level as will permit of storage at the rate of 155,520 cubic feet per acre irrigated and that a suitable surplus weir is constructed in the bund at the site of the old gap through which water used to flow to the Lingasamudram tank before the Subbakunta tank was restored.

3. It must, it is considered, be conceded by His Highness' Government that works in British territory have acquired the prescriptive right to drainage from the Nizam's country, and that though the tank now under discussion is an old work, its capacity has been enormously increased to the prejudice of the Lingasamudram tank.

From T. CHICHELE PLOWDEN, Esq., C.S.I., Resident at Hyderabad, to the Chief Secretary to the Government of Madras, dated Hyderabad Residency, 21st March 1894, No. 1586.

With reference to correspondence ending with your letter No. 328, dated the 27th May last, regarding the supply of water from the Subbakunta to the Lingasamudram tank, I have the honour to forward, for your information, translation of a ruka No. 552, dated the 6th March 1894, with enclosure, received from His Highness the Nizam's Minister on the subject.

Enclosures.

Translation of ruka from His Highness the Nizam's Minister, to the Resident at Hyderabad, dated 6th March 1894, No. 552.

With reference to your ruka No. 84, dated the 15th January 1891, requesting me to issue orders directing the prohibition of any obstruction of the usual sources of supply of the Lingasamudram tank, I have the honour to enclose a copy of a communication from the Revenue Board, No. 47, dated 15th Rajab, 1311 H., furnishing a reply to the letter from the Chief Secretary to the Government of Madras.

Copy of a communication from the Secretary, Revenue Board, to the Secretary to Minister, Revenue and Financial Department, No. 47, dated 15th Rajab, 1311 H. (23rd January 1894).

I have the honour to state that a rubkar from the Mulki Daftar No. 209, dated 14th Jamdi II, 1308 H., giving cover to a ruka from the Resident, No. 84, and a letter from the Chief Secretary to the Government of Madras, was received in this office. It is to the effect that a tank called Subbakunta has been constructed by Modirazu Butchia within the limits of the village of Ellore, taluk Madhera, and within a short distance of the waterspread line of the Lingasamudram tank in British territory, in consequence of which the latter tank has been deprived of its due share of water-supply, and the cultivation under the tank having decreased the British Government suffer loss of revenue. It is therefore requested that the full tank level of the Subbakunta tank may be fixed to the satisfaction of both Governments at such a level as will permit the irrigation of 7 acres in His Highness' territory and 19 acres in British territory and that a surplus weir may be constructed in the bund at the site of the old gap, so that the supply of water to the Lingasamudram tank may not cease.

2. From a report received from the Subadar Saheb of the Eastern division who was addressed on the subject, it appears that in the year 1285 F (1875–76), Butchia was, at his request, granted a regular "cowl" (deed of lease) No. 114 for certain waste land, and he repaired at a great expense the bund of the Subbakunta tank which had remained for a long time in a ruined state. The Lingasamudram tank of the British "ilaka" is situated on low ground and the Subbakunta of His Highness' "ilaka" on high ground. As long as the Subbakunta tank remained in a ruined state, the water used to flow through its gap and get collected in the Lingasamudram tank; but now that it has been constructed, the water has ceased to flow into the Lingasamudram tank. Therefore the British authorities desire that the level of the Subbakunta tank should be diminished and a weir constructed at the site of the old gap in order that the supply of water to the Lingasamudram tank may continue.

3. From a communication received from the Talukdar of the district, it appears that, before there was a gap in the bund of the Subbakunta tank, water used to flow to the Lingasamudram tank from a "nalla" situated in British territory. This "nalla" is situated on the southern corner of the Lingasamudram tank, but after the bund of the Subbakunta tank became ruined the water used to flow to the Lingasamudram tank through the gap of the former.

4. The above are the facts of the case. I agree with the local officials in thinking that Butchia, who was granted by Government a regular "cowl" and who caused the Subbakunta tank to be repaired at considerable expense to himself, cannot be compelled to diminish the level of the tank granted to him by means of a "cowl" and construct a weir at the site of the gap at

his own expense in order to benefit others. Under these circumstances, the only course open to me is the adoption of one of the two following measures:—

Firstly.—The people interested in the Lingasamudram tank should wait till the Subbakunta tank is filled and then get their own tank filled with the superfluous and surplus water from it; or,

Secondly, repairs should be made to the old "nalla" alluded to above, from which water, in the old times, used to flow into the Lingasamudram tank. The "nalla" and the Subbakunta tank get their supply of water from one and the same river called "Maller."

5. I request you will be so good as to communicate the aforesaid reply to the Resident through the Mulki Dafter.

6. I enclose, for your information, copies of correspondence * from the Talukdar of Warangal and the Subadar on the subject.

* Not received.

No. 611, Political.

Transferred to the Public Works Department, Irrigation Branch.

(Signed) L. DAVIDSON,
Ag. Assistant Secretary.

29th March 1894.

ORDER—dated 11th May 1894, No. 390 I., Public Works.

His Excellency the Governor in Council is unable to concur in the proposals made by His Highness the Nizam's Minister, as these proposals do not take into account the prescriptive rights which works in British territory have acquired to drainage from His Highness the Nizam's territory.

2. Pending some solution of the question the Collector of the Gódávari district will not permit any dry lands in British territory commanded by Subbakunta tank to be converted into wet.

3. Ordered that the Resident at Hyderabad be addressed in the Political Department.

(True Extract.)

(Signed) R. R. E. DRAKE-BROCKMAN, Lt.-Col., R.E.,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Chief Engineer for Irrigation.
" Superintending Engineer, I Circle.
" Revenue Department.
" Collector of Gódávari.
" Political Department, with draft letter to Resident, Hyderabad.

IRRIGATION.

Govt. of {1894} Madras.

PUBLIC WORKS.

Dated May, 11th.

Recd. *Encl.*

G.O., 11th May 1894, No. 390 I.

MAY.

Lingasamudram Tank

Orders declining to accept the proposals of His Highness the Nizam's Minister in regard to supply of water to the —, Gódávari district, and prohibiting the conversion of any dry lands in British territory commanded by Subbakunta tank into wet pending solution of the question.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.

Read—the following paper :—

From Major O. V. BODDY, R.E., Superintending Engineer, VI Circle, to the Chief Engineer for Irrigation, dated Trichinopoly, 5th May 1894, No. 123 M.D.

Under paragraph 78, chapter IX of the Public Works Code, I have the honour to request the sanction of Government for execution by this department of the contribution work of "Constructing a dividing dam across the Periyanai channel at its bifurcation" in the Periyakulam taluk, Madura district.

2. The Periyanai channel divides itself into two branches called Karuppukottai channel and Soothoovoikal channel, the former irrigating 55·95 acres in the Davadanampatty village and the latter 227·06 acres in the Gangoovarpatty village. Owing to a dispute between the 2 villages regarding the proportion of water to be taken by each, it has been decided by the Revenue Department that the division should be in the proportion of 1 and 6 based on custom, and that a dam should be built with vents accordingly.

3. At the request of the Revenue Department, a plan and estimate, the latter amounting to Rs. 450, have been prepared by this department as proposed above and approved by the Collector; and the ryots of Gangoovarpatty have paid into the treasury the full amount of contribution, Rs. 560, that is, Rs. 450, estimated cost of work, and Rs. 110, the prescribed centage for establishment and tools and plant. Sanction is therefore requested for execution of the work by this department as desired by the Revenue Department.

Order—dated 16th May 1894, No. 391 I., Public Works.

The execution of the work referred to by the Public Works Department is sanctioned.

(True Extract.)

(Signed) R. R. E. DRAKE-BROCKMAN, Lt.-Col., R.E.,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Chief Engineer for Irrigation.
" Superintending Engineer, VI Circle.
" Examiner, Public Works Accounts.
" Revenue Department.

IRRIGATION.

Govt. of {1894} Madras.

PUBLIC WORKS.

Dated May, 16th.

Recd. *Encl.*

G.O., 16th May 1894, No. 391 I.

MAY.

Dam

The execution by the Public Works Department of the contribution work of constructing a dividing — across the Periyanai channel at its bifurcation in the Periyakulam taluk, Madura district, sanctioned.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

READ—the following paper :—

From S. D. Pears, Esq., Superintendent of Works, No. I Periyár Division, to the Chief Engineer, Public Works Department, dated Kodaikânal, 2nd May 1894, No. 28 C. E.

Agreeably to the remarks of the Examiner in the divisional statement of objectionable itms in the accounts for December 1893, I have the honour to request that sanction of Government may be obtained to the excess of Rs. 2,091 over the reserve stock limit of Rs. 60,000 sanctioned in G.O., No. 693 I., dated 18th August 1893.

2. I enclose a statement comparing the amounts sanctioned under each sub-head of stock with the actual balance on 31st March 1894.

3. The excess is principally under "Timber," and this was due to a large quantity of timber having been collected in view to their being well seasoned before use.

ENCLOSURE.

STATEMENT showing the sanctioned limits of reserve stock and balance of stock on 31st March 1894.

Sub-head.	Sanctioned limit.			Balance on 31st March 1894.		
	RS.	A.	P.	RS.	A.	P.
Small stores	3,000	0	0	1,848	3	10
Timber	10,000	0	0	19,976	15	9
Metals	5,000	0	0	2,795	11	5
Painters' stores	1,000	0	0	1,704	12	9
House fittings	1,000	0	0	662	15	0
Miscellaneous	40,000	0	0	35,102	3	3
Total ...	60,000	0	0	62,090	14	0

ORDER—dated 16th May 1894, No. 393 I., Public Works.

Sanctioned.

(True Extract.)

(Signed) R. R. E. DRAKE-BROCKMAN, Lt.-Col., R.E.,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Superintendent of Works, Periyár Project.
,, Chief Engineer for Irrigation.
,, Examiner, Public Works Accounts.

IRRIGATION.
ACCOUNT.

Govt. of {1894} Madras.

PUBLIC WORKS.

Dated May, 16*th*.

Recd. *Encl.*

G.O., 16th May 1894, No. 393 I.

MAY.

Reserve Stock

Increasing the — limit of No. I Periyár division by Rs. 2,091.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

Read—the following paper :—

From S. D. PEARS, Esq., Superintendent of Works, No. I Periyár Division, to the Chief Engineer, Public Works Department, dated Kodaikánal, 7th May 1894, No. 32 C.E.

I have the honour to submit, for sanction of Government, an estimate, amounting to Rs. 6,000, for annual repairs to the floating plant for 1894–95.

Order—dated 18th May 1894, No. 402 I., Public Works.

The estimate submitted with the foregoing letter is approved. It should be resubmitted for the formal sanction of Government from the amount provided for further outlay under tools and plant in the revised estimate for the Periyár project submitted in Proceedings of the Madras Government, No. 97 I., dated 3rd February 1894, for the sanction of the Government of India as soon as that sanction is communicated to the Superintendent of Works, No. I Periyár Division.

(True Extract.)

(Signed) J. PENNYCUICK, Colonel, R.E.,
Secretary to Govt., P.W.D.

To the Chief Engineer for Irrigation.
„ Superintendent of Works, No. I Periyár Division, with one estimate.
„ Examiner, Public Works Accounts.

IRRIGATION.
ACCOUNT.

Govt. of {1894} Madras.

PUBLIC WORKS.

Dated May, 18th.

Recd. *Encl.*

G.O., 18th May 1894, No. 402 I.

MAY.

Annual Repairs to Floating Plant, No. I Periyar Division, for 1894-95

Estimate of Rs. 6,000 for the —, approved, and ordered to be resubmitted for formal sanction on receipt of the Government of India sanction to the revised estimate for the project.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

Read—the following paper :—

No. 69 I.

Note by the Chief Engineer for Irrigation.

In their letters marginally noted the Superintending Engineers, V and VI Circles, respectively applied for the following amounts for expenditure during the current year under "49. Capital Expenditure not charged to Revenue":—

No. 124 E.I, dated 2nd April 1894.
,, 35 T.N. ,, 13th ,, ,,

Cauvery Delta System.
Negapatam Division.
Constructing sheds for the Superintendent and Cavalgars at Coriyar Head Works.

	RS.	RS.
Works	1,510	
Establishment	347	
Tools and plant	23	
	——	1,880

Constructing an inspection shed at Vellayar-Chittar head.

	RS.	
Works	2,263	
Establishment	521	
Tools and plant	28	
	——	2,812

Srívaikuntam Anicut System.
Tinnevelly Division.
Raising the crest of the Srívaikuntam Anicut.

	RS.	
Works	1,150	
Establishment	265	
Tools and plant	15	
	——	1,430
	Total ...	6,122

Any saving due to the executive arrangements approved in G.O., No. 806 W., dated 21st March 1894, in the current year's grant for the late No. II Periyár Division will, it is anticipated, be required for the No. I Division, the grant for which was considerably curtailed in the final issue of the current year's budget estimates. To a reference made by this office, the Superintending Engineer, II Circle, in his letter, No. 14 C., dated 6th instant, reports that he is unable to spare the small amounts required for the Cauvery delta and Srívaikuntam anicut systems from the grant assigned for the Kistna delta system. As the grants for other systems do not admit of reduction and it is now too early in the year to apply to the Government of India for an additional assignment, there is no alternative but to appropriate the amounts required from the sum of Rs. 7,990 reserved under land compensation—*vide* items 129 and 166 of part II of the final issue of the current year's Major Works budget. Should it

be eventually found that more money could be spent in the Kistna delta, an application may be submitted to the Government of India to augment the grant under this head.

(Signed) R. R. E. DRAKE-BROCKMAN, Lt.-Col., R.E.,
Chief Engineer for Irrigation.

18th May 1894.

ORDER—dated 22nd May 1894, No. 406 I., Public Works.

The following transfers of funds are sanctioned :—

Capital Expenditure not charged to Revenue.
49. Irrigation.

From		*To*		
Kistna Delta System.		Cauvery Delta System. Negapatam Division.		
Reserve for Land—	RS.		RS.	RS.
Kistna Eastern Division	2,500	Works	3,773	
Do. Western do.	3,622	Establishment	868	
		Tools and plant	51	
				4,692
		Srívaikuntam Anicut System. Tinnevelly Division.	RS.	
		Works	1,150	
		Establishment	265	
		Tools and plant	15	
				1,430
Total ...	6,122	Total ...		6,122

2. Ordered that a copy of these Proceedings be forwarded to the Government of India for information.

[Here enter No. 407 I., dated 22nd May 1894.]

(True Extract.)

(Signed) R. R. E. DRAKE-BROCKMAN, Lt.-Col., R.E.,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Chief Engineer for Irrigation.
" Superintending Engineer, II Circle.
" " " V "
" " " VI "
" Examiner, Public Works Accounts.

ENDORSEMENT—dated 22nd May 1894, No. 407 I., Public Works.

Forwarded.

(By Order.)

(Signed) R. R. E. DRAKE-BROCKMAN, Lt.-Col., R.E.,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

IRRIGATION.
ACCOUNT.

Govt. of {1894} Madras.

PUBLIC WORKS.

Dated May, 22nd.

Recd. *Encl.*

G.O., 22nd May 1894, Nos. 406, 407 I.

MAY.

Funds

Forwarding Proceedings sanctioning certain transfers of — from the Kistna delta system to the Cauvery delta and Srívaikuntam anicut systems.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

READ—the following papers :—

From J. HANNAN, Esq., Superintending Engineer, IV Circle, to the Chief Engineer for Irrigation, dated 30th April 1894, No. 96/E.I.

I have the honour to bring to your notice that a sum of Rs. 146–6–3 was overpaid in December 1890 by Conductor J. Cormac, late Sub-divisional officer, Salem, to the contractor (Dorasawmy Naidu) for work done on constructing a weir at left flank of the Ervady Pettamputty tank. The excess payment was due to an oversight in auditing the bill in which wrong month of previous payment was quoted, viz., "August 1890" instead of "September 1890."

2. The error was subsequently detected and Rs. 83–4–0 were recovered in March and July 1891, thus reducing the overpayment to Rs. 63–2–3, which amount remained unrecovered till the reconstitution of the Salem division in December 1891. Rupees 49–13–2 were subsequently recovered from the amount due to the contractor and adjusted, leaving a balance of Rs. 13–5–1 still to be recovered. The contractor has been repeatedly asked to remit the amount in vain.

3. Inquiry has been made as to the party responsible for the overpayment. It was due to an oversight on the part of the Sub-divisional officer in quoting wrong month of payment in the bill, which also unfortunately escaped the notice of the Accountant who audited the same.

4. This small sum of Rs. 13–5–1 is repeatedly brought on by the Examiner in the divisional objection item statements. There being no chance of recovering the amount, I have the honour to request you will be good enough to obtain the sanction of Government to waive its recovery from contractor Dorasawmy Naidu.

Office-note to the Examiner, Public Works Accounts, dated 2nd May 1894, No. 121.

Forwarded to the Examiner of Public Works Accounts for remarks.

Office-note from the Officiating Examiner of Public Works Accounts, dated 8th May 1894, No. 1854 D.

Sanction of Government is necessary to waive the recovery of the amount Rupees 13–5–1 overpaid to contractor Dorasawmy Naidu and may be accorded as recommended by Superintending Engineer.

ORDER—dated 23rd May 1894, No. 408 I., Public Works.

No further steps need be taken for the recovery of the balance of the overpayment referred to in the foregoing correspondence.

(True Extract.)

(Signed) R. R. E. DRAKE-BROCKMAN, Lt.-Col., R.E.,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Chief Engineer for Irrigation.
" Superintending Engineer, IV Circle.
" Examiner, Public Works Accounts.

IRRIGATION.
ACCOUNT.

Govt. of {1894} Madras.

PUBLIC WORKS.

Dated May, 23rd.

Recd. *Encl.*

G.O., 23rd May 1894, No. 408 I.

MAY.

Overpayment

Ordered that no further steps need be taken for the recovery of balance of — made to contractor Dorasawmy Naidu, Salem division.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.

READ—the following paper :—

From G. D. WYBROW, Esq., Superintending Engineer, I Circle, to the Chief Engineer for Irrigation, dated Dowlaishweram, 21st April 1894, No. 199 G.D.

I have the honour to request that you will be so good as to address Government on the necessity of bringing into force the River Conservancy Act at an as early a date as possible.

2. The river charts and registers of the Gódávari were prepared by this department under the River Conservancy Act and were submitted to the Collector of Gódávari so long ago as the 15th July 1891.

3. The period after which objections by land-holders could not be raised expired on the 28th September 1891, but Government were pleased to extend the time for 90 days—*vide* G.O., No. 842 I., dated 29th October 1891. Any further extension of time granted has not been communicated to me.

4. I have addressed the Collector on the subject in June last, and he informed me that the charts and registers had been referred to the Sub and Head Assistant Collectors.

5. The encroachments, more especially by zemindars, in the bed of the river are increasing year by year. I have addressed the revenue authorities on several occasions, but without an Act they seem unable either to stop or to prevent the encroachments. I trust therefore that Government will be pleased to issue early orders on the subject, so that the Act may be brought into force without further delay.

ORDER—dated 23rd May 1894, No. 409 I., Public Works.

Orders will be issued in the Revenue Department calling the attention of the Collector of Gódávari to the necessity for expediting the submission of the river charts and register of the Gódávari required for bringing into force the River Conservancy Act.

(True Extract.)

(Signed) R. R. E. DRAKE-BROCKMAN, Lt.-Col., R.E.,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Superintending Engineer, I Circle.
" " Revenue Department.

IRRIGATION.

Govt. of {1894} Madras.

PUBLIC WORKS.

Dated May, 23rd.

Recd. *Encl.*

G.O., 23rd May 1894, No. 409 I.

MAY.

River Conservancy Act

Orders to issue in the Revenue Department calling the attention of the Collector of Gódávari to the necessity for expediting the submission of the river charts and register of the Gódávari in view to the — being brought into force.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

READ—the following paper :—

From Major W. L. C. BADDELEY, R.E., Superintending Engineer, II Circle, to the Chief Engineer for Irrigation, dated Gudur, 7th May 1894, No. 16 C.

I have the honour to forward herewith two statements showing the grants proposed to be transferred to the newly-constituted Kistna Northern division from the grants assigned to the Kistna Eastern and Western divisions for the current year, and to request that you will be so good as to obtain the sanction of Government for the transfer and include the works in the several budgets, if not too late, under the Kistna Northern division.

ENCLOSURES.

LIST showing the works and grants to be transferred from the Kistna Eastern division to the Kistna Northern division.

Name of work.	Amount of estimate.	Expenditure to end of 1893–94.	Balance of estimate.	Allotment for the current year.
	RS.	RS. A. P.	RS. A. P.	RS.
CAPITAL EXPENDITURE ON PUBLIC WORKS NOT CHARGED AGAINST REVENUE.				
49. *Irrigation.*				
I. Works.				
Raising Kistna anicut	7,500	3,368 2 8	4,131 13 9	4,000
Constructing curtain wall in rear of Sitanagaram head sluice	3,300	1,990 9 2	1,309 6 10	1,400
Driving piles in front of Sitanagaram head sluice ..	3,200	3,212 7 4	— 12 7 4	100
Wire fencing around Public Works Department offices at Buckinghampet	690	27 9 0	662 7 0	700
Total ..	..	..	..	6,200
42. *Major Works (Working Expenses).*				
1. Extensions and Improvements.				
Levelling and fencing the ground in the West Lanka for repairing boats	810	465 12 2	344 3 10	350
2. Maintenance and Repairs.				
Kistna anicut—Annual repairs for 1894–95	9,510	..	..	9,510
Main canal do. do.	4,700	..	..	4,700
Ryves' canal do. do.	1,575	..	..	1,570
Repairing Kistna Eastern Division office	130	21 14 3	108 1 9	108
Ellore canal—Annual repairs	3,450	..	..	3,450
Total ..	..	..	..	19,338

List showing the works and grants to be transferred from the Kistna Eastern division to the Kistna Northern division—*cont.*

Name of work.	Amount of estimate.	Expenditure to end of 1893-94.	Balance of estimate.	Allotment for the current year.
	RS.	RS. A. P.	RS. A. P.	RS.
42. *Major Works (Working Expenses).*				
5. Tools and Plant.				
Tools, new supply	..	..	..	1,500
Scientific instruments	..	..	..	400
Annual repairs to floating plant	..	..	..	18,000
Special repairs to do.	..	..	..	5,500
Repairs to machinery	..	..	..	3,400
Licensing Government floating plant	..	..	..	5,500
Repairs and carriage of tools and plant	..	..	..	400
Charges on account of steamer used by Public Works Department officers	..	..	..	500
Total ..	..	..	..	35,200
43. *Minor Works and Navigation.*				
Works for which Capital and Revenue Accounts are kept.				
Capital.				
Muneru project works	3,68,000	..	..	* 20,325
Works for which neither Capital nor Revenue Accounts are kept.				
Original works	..	..	..	Nil.
Repairs	..	..	..	3,000
Agricultural Works.				
Original Works—Nil.				
Repairs.				
River Conservancy.				
Repairing groynes and planting grass above anicut	1,280	..	..	1,000
River Embankment.				
Repairing river embankment between Guntúr road and Vundavalli Hill	80	..	..	300
Maintenance of river bank above anicut from toll-gate to Ibrampatam	200	..	..	

* *Note by the office of the Chief Engineer for Irrigation.*

This amount was allotted to the Kistna Western division in the final issue of the current year's budget estimates.

LIST showing the works and grants to be transferred from the Kistna Western division to the Kistna Northern division.

Name of work.	Amount of estimate.	Expenditure to end of 1893-94.	Balance of estimate.	Allotment for the current year.
	RS.	RS. A. P.	RS. A. P.	RS.
43. *Minor Works for which Capital and Revenue Accounts are kept.*				
Major Works.				
Dondapad tank bund, compensation	6,840	..	..	3,840
Surplus weir to Dondapad tank	29,700	..	..	8,000
Dondapad tank bund	19,200	..	..	8,000
Nadigadda tank bund and by-wash	22,750	..	..	10,000
Excavating east side channel of Dondapad tank	3,280	..	..	2,000
Constructing sluice No. 2 to Nadigadda tank	2,330	..	..	1,000
Excavating distributary from Nadigadda tank	2,588	..	..	399
Total ..	..	..	..	33,239
43. *Minor Works and Navigation for which neither Capital nor Revenue Accounts are kept.*				
Tank Restoration—Execution.				
Minor works	..	..	..	15,000
Repairs	..	..	..	† 15,000

† *Note by the office of the Chief Engineer for Irrigation.*

This amount was reduced to Rs. 12,000 in the final issue of the current year's budget estimates.

ORDER—dated 23rd May 1894, No. 410 I., Public Works.

The following transfers of funds are sanctioned:—

Capital Expenditure not charged to Revenue.
49. Irrigation.
Kistna Delta System.

From. Kistna Eastern Division.		*To.* Kistna Northern Division.	
	RS.		RS.
Works	6,200	Works	6,200

42. Major Works (Working Expenses).
Kistna Delta System.

Kistna Eastern Division.		Kistna Northern Division.	
	RS.		RS.
Extensions and improvements ...	350	Extensions and improvements ...	350
Maintenance and repairs	19,338	Maintenance and repairs	19,338
Tools and plant	35,200	Tools and plant	35,200

Provincial.
43. Minor Works and Navigation.
Minor Works for which Capital and Revenue Accounts are kept.
Capital Account.
Muneru Project.

Kistna Western Division.		Kistna Northern Division.	
	RS.		RS.
Works	20,325	Works	20,325

Dondapad Tank Project.

	RS.		RS.
Works	33,239	Works	33,239

Minor Works for which neither Capital nor Revenue Accounts are kept, P W.D.
Ordinary Works.

Kistna Eastern Division.		Kistna Northern Division.	
	RS.		RS.
Repairs	3,000	Repairs	3,000

Tank Restoration Works.

Kistna Western Division.		Kistna Northern Division.	
	RS.		RS.
Original works	15,000	Original works	15,000
Repairs	12,000	Repairs	12,000

Agricultural Works.

Kistna Eastern Division.		Kistna Northern Division.	
	RS.		RS.
River conservancy—Repairs ...	1,000	River conservancy—Repairs ...	1,000
River embankment—Repairs ...	300	River embankment—Repairs ...	300

(True Extract.)

(Signed) R. R. E. DRAKE-BROCKMAN, Lt.-Col., R.E.,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Chief Engineer for Irrigation.
" Superintending Engineer, II Circle.
" Examiner, Public Works Accounts.
" Revenue Department.

IRRIGATION.
ACCOUNT.

Govt. of {1894} Madras.

PUBLIC WORKS.

Dated May, 23rd.

Recd. *Encl.*

G.O., 23rd May 1894, No. 410 I.

MAY.

Funds

Certain transfers of — from the Kistna Eastern and Western divisions to the newly-constituted Kistna Northern division, sanctioned.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.

READ—the following paper :—

G.O., dated 4th May 1894, Mis. No. 1788, Revenue.

Read—the following Proceedings of the Board of Revenue (Land Revenue), dated 16th April 1894, Mis. No. 2033 :—

Read—the following letter from the Chief Engineer for Irrigation, to the Secretary to the Commissioners of Land Revenue, dated 21st March 1894, No. 164 M.

With reference to Board's Proceedings, Mis. No. 477, dated 31st January 1894, I have the honour to observe that what would meet the case appears to me to build the necessary head sluices to both the Kallapuram and Krishna Aiyar's channels and, as long as there is sufficient water in the river to supply the acreages under both channels, to admit water in those channels to the necessary depth on rear floor, taking a duty of 44 acres per cubic foot per second. When water is not sufficient for the total acreage under both channels, only the surplus available after Kallapuram channel is fully supplied should be sent down Krishna Aiyar's channel. The Kallapuram channel acreage should in all cases have the preference.

Endorsement by the Secretary to the Commissioner of Revenue Settlement, Land Records and Agriculture, dated 3rd April 1894.

Transferred to the Commissioners of Land Revenue.

Resolution—dated 16th April 1894, Mis. No. 2033.

Submitted to Government with reference to paragraph 2 of G.O., dated 13th March 1894, Mis. No. 1096.

2. The Board agrees with the Chief Engineer for Irrigation in considering that head sluices should be built to both the Kallapuram and Krishna Aiyar's channels. The cost of the sluice at the head of the latter channel should, however, be recovered from Krishna Aiyar's son as already directed by Government. It is requested that orders may issue in the Public Works Department for the works to be put in hand at an early date.

3. As the area which Krishna Aiyar's son is entitled to irrigate at a favorable rate of assessment under the terms of the grant of 1863 has been fixed at 1,569·08 acres, irrigation in excess of this extent or new irrigation outside the limits of his grant should be charged with prohibitory assessment as proposed in paragraph 5 of the Collector's letter, dated 17th July 1893, Ref. on 820 Board. K. Venkata Krishnier should be informed accordingly.

Order—dated 4th May 1894, Mis. No. 1788, Revenue.

The Board's recommendations in paragraphs 2 and 3 of its Proceedings read above are approved. Orders will issue in the Public Works Department for the construction of the head sluices at an early date.

(True Extract.)

(Signed) E. GIBSON,
Ag. Secretary to Government.

ORDER—dated 23rd May 1894, No. 411 I., Public Works.

Communicated to the Superintending Engineer, IV Circle, who will arrange for constructing both the head sluices as soon as possible, the cost of the sluice for the Krishna Aiyar's channel being recovered as a deposit in advance from his son.

(True Extract.)

(Signed) R. R. E. DRAKE-BROCKMAN, Lt.-Col., R.E.,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Chief Engineer for Irrigation.
„ Superintending Engineer, IV Circle.
„ Examiner, Public Works Accounts.
„ Revenue Department.

IRRIGATION.

Govt. of {1894} Madras.

PUBLIC WORKS.

Dated May, 23rd.

Recd. *Encl.*

G.O., 23rd May 1894, No. 411 I.

MAY.

Head Sluices

Orders in the Revenue Department for the construction of — to the Kallapuram and Krishna Aiyar's channels, Coimbatore district, communicated to the Superintending Engineer, IV Circle, with remarks.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

Read—the following paper :—

From the Executive Engineer, Gudiváda Division, to the Superintending Engineer, II Circle, dated 3rd April 1894, No. 437 S.E.

With reference to your No. 3095 K.S., dated 23rd March 1894, I have the honour to state that Mr. Chatterton took with him all information required for a report on the experimental irrigation at Mattugunta. He has written to me now that he has arranged with the Chief Engineer for Irrigation to publish an account of it in "Indian Engineering" in about a fortnight and so separate report on the same is not required.

No. 77 K.S.

Forwarded to the Chief Engineer for Irrigation together with a revised estimate and comparative statement amounting to Rs. 4,400 for experimental irrigation from Upputeru at Mattugunta in the Gudiváda taluk, Kistna, for favour of obtaining the sanction of Government.

2. In the comparative statement reasons for excesses have been fully given.

(Signed) A. S. RUSSELL,
Ex. Engr., in charge II Circle.

13th April 1894.

No. 70 I.

Submitted to Government. The original estimate of Rs. 2,400 was sanctioned by the Superintending Engineer during 1893–94 under "42. Major Works (Working Expenses)—Extensions and Improvements," but as estimates for Extensions and Improvements amounting to more than Rs. 1,000 should not, under paragraph 156 A., chapter XV, Public Works Department Code, be charged to the Revenue Account, the revised estimate of Rs. 4,400 may be sanctioned under "49. Capital Expenditure not charged to Revenue."

(Signed) R. R. E. DRAKE-BROCKMAN, Lt.-Col., R.E.,
Chief Engineer for Irrigation.

16th May 1894.

Order—dated 24th May 1894, No. 413 I., Public Works.

In lieu of the estimate of Rs. 2,400 sanctioned by the Superintending Engineer, II Circle, under "42. Major Works (Working Expenses)—Extensions and Improvements," the following revised estimate is sanctioned from the balance of the amount reserved for unforeseen works of the Kistna delta system, which will then be reduced to Rs. 2,92,739 :—

Capital Expenditure not charged to Revenue.
49. Irrigation.
Kistna Delta System.
Eastern Section.
I. Works.
4. Drainage and Protective Works.
4. Earthwork.

	RS.
Experimental irrigation from Upputeru at Mattugunta, estimate ...	4,400

2. This sanction is registered as No. 29 I. of 1894–95.

(True Extract.)

(Signed) R. R. E. DRAKE-BROCKMAN, Lt.-Col., R.E.,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Chief Engineer for Irrigation.
" Superintending Engineer, II Circle, with two enclosures.
" Examiner, Public Works Accounts.
" Revenue Department.

IRRIGATION.
ACCOUNT.

Govt. of {1894} Madras.

PUBLIC WORKS.

Dated May, 24th.

Recd. *Encl.*

G.O., 24th May 1894, No. 413 I.

MAY.

Experimental Irrigation from the Upputeru

Revised estimate of Rs. 4,400 for — at Mattugunta, Kistna delta system, sanctioned with remarks.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

Read—the following paper:—

From A. S. RUSSELL, Esq., Executive Engineer, in charge II Circle, to the Chief Engineer for Irrigation, dated Madras, 18th April 1894, No. 145 K.S.

I have the honour to forward, for your approval and sanction of Government, estimate, amounting to Rs. 2,250, for constructing head sluice to Kollur side and Varahapuram channels at 15 miles 3 furlongs and 300 feet, Bank canal, in the Kistna Western division, and to request that you will be so good as to sanction the same from the provision of items Nos. 557 and 558 of the statement printed with G.O., No. 857 I., dated 11th October 1893.

2. The report which accompanies the estimate explains the necessity for the work.

Enclosure.

Report to accompany estimate for constructing head sluice to Kollur side and Varahapuram channels at 15 miles 3 furlongs and 300 feet, Bank canal.

In order to extend the irrigation under the Bank canal, it has been proposed to take up the lands under the Kollur block. This block is bounded on the north by the Guntúr-Iloor road, on the east by the Bank canal, on the south by the Vellatur channel, and on the west by the depression of the Gundaru. For the present it is proposed to cultivate all available lands up to Kollur village as a southern boundary; the rest of the block will be dealt with separately in future.

2. It is now proposed to excavate two channels, one called the Kollur side and the other the Varahapuram channel. The Kollur side channel will run on parallel to the Bank canal from the proposed head sluice to about a distance of 5 miles, giving branch channels all along. At present there are only two big channels, called the Anantavaram channel and the Ipur channel, which come across this side channel and would be cut off by it. All the existing spouts in Bank canal right bank will be removed and water given for irrigation by the side channel.

It is proposed to bring about 5,000 acres under cultivation under this side channel as shown below:—

Name of village.	Acreage of proposed cultivation.
	ACRES.
1. Annavaram ...	200
2. Anantavaram ...	1,600
3. Chilumur ...	400
4. Ipur ...	700
5. Kollur ...	1,400
6. Rayakampod ...	500
7. Kuchellapod ...	300
Total ...	5,100

3. The Varahapuram channel will run west and south-west from the head sluice for a distance of about 6 miles, and it is proposed to bring about 5,000 acres under cultivation as detailed below :—

Name of village.	Acreage of proposed cultivation.
	ACRES.
Anantavaram	300
Rayakampod	600
Chedalavada	600
Chemudupod	500
Kuchellapod	1,200
Varahapuram	350
Vamur	1,400
Total ..	4,950

4. The proposed total irrigation under these channels comes to 10,050 acres. Of this, the existing irrigation is 3,400 acres. The increase of irrigation will therefore be 6,650 acres.

5. In order to cultivate these lands, a masonry head sluice has been proposed to be built at 15 miles 3 furlongs and 300 feet of Bank canal. The sluice has been designed with 2 vents of 5 span each with a clear opening 3 feet high. The head has been taken as low as 0·75 foot, which will give a discharge of 65·25 cubic feet per second for each vent. The actual discharge required in each channel (through each vent) is 55·55 cubic feet per second, which is sufficient to irrigate 5,000 acres taking the duty of water at 90 acres per cubic foot per second.

6. The actual F.S.L. in the Bank canal is + 32·20 and for purpose of calculation of head it has been taken as low as + 30·00, which gives a head of 0·75, the F.S.L. of the proposed channel being taken as + 29·25 and this F.S.L. of the proposed channel can therefore be increased if necessity arises for any further extension of irrigation than what is contemplated at present owing to the margin that has been allowed in calculating the head.

7. The sluice will have a concrete foundation in surki mortar as shown in plan. The superstructure will be of random rubble in surki mortar. The work will be carried out in conformity with the standard specifications.

(Signed) A. A. G. MALET,
Ex. Engr., Kistna Western Division.

13th February 1894.

No. 71 I.

Submitted to Government. The Superintending Engineer should submit a map showing the area commanded, already effectively irrigated and proposed to be irrigated by the Kistna anicut system in order to enable Government to form an idea of the progress made in extending irrigation and the areas still available in the delta.

(Signed) R. R. E. DRAKE-BROCKMAN, Lt.-Col., R.E.,
Chief Engineer for Irrigation.

17th May 1894.

ORDER—dated 25th May 1894, No. 414 I., Public Works.

The following estimate is sanctioned from the provision of Rs. 2,560 made for items 557 and 558 of the statement printed in Proceedings of the Madras Government, No. 857 I., dated 11th October 1893 :—

Capital Expenditure not charged to Revenue.
49. Irrigation.
Kistna Delta System.
Western Section.
I. Works.
Bank Canal.
3. Distributaries.
3. Works.

	RS.
Constructing head sluice to Kollur side and Varahapuram channels at 15 miles 3 furlongs and 300 feet, estimate	2,250

2. This sanction is registered as No. 31 I. of 1894–95.

3. The attention of the Superintending Engineer, II Circle, is drawn to the remarks in the foregoing endorsement of the Chief Engineer for Irrigation.

(True Extract.)

(Signed) R. R. E. DRAKE-BROCKMAN, Lt.-Col, R.E.,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Chief Engineer for Irrigation.
„ Superintending Engineer, II Circle, with one enclosure.
„ Examiner, Public Works Accounts.
„ Revenue Department.

IRRIGATION.
ACCOUNT.

Govt. of {1894} Madras.

PUBLIC WORKS.

Dated May, 25th.

Recd. *Encl.*

G.O., 25th May 1894, No. 414 I.

MAY.

Head Sluice

Estimate of Rs. 2,250 for constructing — to Kollur side and Varabapuram channels at 15 miles 3 furlongs and 300 feet, Western section, Bank canal, of the Kistna delta system, sanctioned with remarks.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

READ—the following papers :—

From A. S. RUSSELL, Esq., Executive Engineer, Buckingham Canal Division, to the Superintending Engineer, II Circle, dated Pulicat, 11th February 1894, No. 2704.

With reference to instructions given in your recent inspection of the Buckingham canal, I have the honour to submit the undermentioned estimates for sanction under Capital :—

(1) Raising new East bank of canal at 163rd mile amounting to Rs. 2,330.
(2) Forming a flood bank on the Manneru river right border amounting to Rs. 7,650.

2. The necessity for the works is explained in the report accompanying each estimate.

3. The amount of these estimates can be met from the reserve at the disposal of Government.

4. Funds have been provided for these works in the scheme of expenditure for 1894–95, and sanction to the estimates and execution of the works is advisable at an early date.

ENCLOSURES.

REPORT to accompany estimate for raising new East bank at 163rd mile.

	RS.
Amount of estimate	2,330

The construction of this bank was sanctioned in G.O., No. 335 I., dated 13th April 1893, and was only finished shortly before the break of the last north-east monsoon. The bank is composed of pure sand and has stood the unusually heavy monsoon rains very well. Owing, however, to the tides from the sea now sweeping right up to the bank and to the fact that the foreshore, which was scoured out by last year's floods, has not yet silted up as anticipated, it is exposed to a very heavy surf action and needs to be raised in order to ensure its safety. The level of the bank at present is + 26·00 or M.S.L. + 7, and this estimate provides for raising it to + 28·00. This height will give a margin of 6 feet above the crest of escape in mile 161/3, which is + 22·00, and there will then be no danger of the bank being breached by floods in the canal and little (if any) risk from the sea breaking in.

2. The rate, as per details given, has been calculated for conveying the earth by punt supplied from the Kistna district. There will be a twofold advantage gained by using punts, viz., the rate is much less than would be the case by employing manual labour, since the only available earth is very distant and what is available is pure sand. By using punts, good clay soil can be brought from a distance at a comparatively small cost and the bank can be made efficient.

3. A sheet of sections accompanies the estimate, showing the required levels and the amount of raising and widening required to be done.

4. The safety of this bank is it should be remarked in conclusion, of great importance, and very heavy outlay will be entailed should the sea break in again. When the breach in the bank was originally made by the Manneru river bursting into the canal in October 1892, continuous heavy outlay in clearance of canal was necessary to keep open communication until the breach was closed at great cost, the canal here being taken so close to the sea that extraordinarily heavy silting was daily caused by tidal action.

5. The report to the estimate sanctioned in G.O., No. 335 I. of 13th April 1893, shows that the question of providing proper means of surplus in canal has already been considered.

REPORT to accompany the estimate for forming a flood bank on Manneru right border.

	RS.
Amount of estimate	7,650

Spill from the breaches in the river's right border, which were caused by the unusually heavy floods of 1892, discharged three times during the recent north-east monsoon and brought down a large quantity of silt, completely blocking up the canal and causing a sand bar to nearly berm level or + 22, for 1⅓ furlongs in length, thereby stopping the canal traffic for some days in November last. Even low freshes in the river now discharge through the breaches in the river's border, spill through such breaches occurring at the level of 10 feet on the river gauge, whereas M.F.L. on the gauge is as much as 19·00 feet. Severe damage to canal in every monsoon is thus to be feared, unless spill from the river is prevented from crossing the canal. To stop this, it is now proposed to construct a regular flood bank from the canal west bank at 159/2 almost parallel with the river and nowhere less than 600 feet distant from it, so as to join on to the high ground at Komattagunta—*viae* tracing from survey. This will prevent river spill spreading out all over the country and damaging the canal and will also protect the village of Pollipalem from danger of flood water from the Manneru river. There will then be no inducement for the bank to be cut (as is believed was formerly done by these villagers to the old bank, * which did *not* protect their village) in order to save the village from risk of inundation when the Manneru river is in flood.

* *Vide* tracing from survey.

2. The unsatisfactory conditions obtaining on the right bank of the Manneru river have already been fully stated in the references quoted in the first paragraph of the report printed with G.O., No. 335 I., dated 13th April 1893. The estimate sanctioned in that Government Order did not provide for any protection on the right border of the Manneru river, the expense of doing so being considered prohibitive and it being thought advisable to first try the experiment of allowing spill from the river to cross the canal line. As explained in the preceding paragraph, it is found, from the experience of the floods of last monsoon, that spill from the river brings such an enormous quantity of sand into the canal that the provision of a regular flood bank to the river's right border can no longer be deferred.

3. The section of bank is made similar to the old bank as ordered by the Superintending Engineer, *i e.*, top breadth being 6 feet with side slopes 2 to 1 and 3 to 1 and 6 feet above M.F.L. The M.F.L. at Komattagunta is found to be 35·00, and at 159/2 30·50, the river having a surface fall of 4 feet per mile. The top of the bank will be sloped longitudinally so as to follow this surface fall.

4. There being a great fall from the river border to line of bank at the existing low parts, these portions of bank will be protected by piling and lacing so as to protect the bank from the danger of being undermined by erosion.

5. The tracing from the survey will show that the existing line of canal from mile 159/2 is carried parallel to the river and that the west bank of canal forms a flood bank to keep the river out, the south flood gate being built at 159/6 and the river being thus attempted to be forced round a very sharp curve, and all spill which formerly extended so far south as mile 159, being confined, so that the whole flood discharge of the river is now contracted to the comparatively narrow passage between mile 160/2 and the north flood gate. It is very doubtful whether even the long flood bank that is now proposed will, without further protective measures, prevent the rivers breaking out again to its old bar at 159 and will suffice to force it round such a tremendous curve as it now has to traverse before its flood waters have a straight run to sea at mile 160/2. The right border of the river is now being eroded with every flood, and the construction of new groynes will be necessary to lessen this. As a measure of precaution, the head of the proposed line of flood bank has been thrown back 600 feet from the river's right border, and it seems likely that it will ultimately be necessary to pitch a portion of this bank with stone.

PULICAT,
14th February 1894.

(Signed) A. S. RUSSELL,
Ex. Engr., Buckingham Canal.

Under the circumstances now existing the proposal to make a flood bank on the alignment proposed by the Executive Engineer is, I believe, after personal inspection, the most suitable plan to adopt. I think the bank will protect the canal for at least some years, while, should the river hereafter force itself through the breaches in the right margin marked "1892" and "1893" on the survey, the bank from near the village of Pollipalem will remain useful if it is then connected with the west bank of the canal at about mile 158/VII, as by this means it will prevent the flood waters of the river passing further to the right and injuring the west bank.

28th February 1894.

(Signed) J. W. MARTIN,
Suptg. Engineer, II Circle.

No. 484/B.C.

Forwarded to the Chief Engineer for Irrigation for favour of obtaining the sanction of Government for the two estimates noted in the foregoing.

2. As punts for boating earth for the bank at mile 163 have been sent from the Kistna district to work till the reopening of the Kistna canals if the estimate is approved, please wire orders to start the work in anticipation of sanction to the estimates.

22nd March 1894.

(Signed) J. W. MARTIN,
Suptg. Engineer, II Circle.

No. II/15 B.C.

MEMORANDUM.

In returning, for revision, the estimates and plans received with endorsement No. 484 B.C., dated 22nd March 1894, from the Superintending Engineer, II Circle, the undersigned has the honour to say that the Chief Engineer for Irrigation considers that a margin of 3 feet above M.F.L. is ample, seeing that frequent inspection is possible and that, consequently, the bank can be easily maintained at its full section.

29th April 1894.

(Signed) R. R. E. DRAKE-BROCKMAN, Lt.-Col., R.E.,
Chief Engineer for Irrigation.

To the Superintending Engineer, II Circle.

From A. S. RUSSELL, Esq., Executive Engineer, Buckingham Canal Division, to the Superintending Engineer, II Circle, dated 11th April 1894, No. 106.

In acknowledging the receipt of memo. No. II/15 B.C., dated 29th ultimo, from the Chief Engineer for Irrigation to your address, forwarded with your endorsement No. 5 B.C., dated 6th instant, I have the honour to say that the cutting down of the margin in height, as proposed, will, in my opinion, result in most serious disaster on the occurrence of the next heavy gale from the sea or big flood in the river Manneru.

2. It is not a question of the mere maintenance of a 3 feet margin above M.F.L. Such a margin is wholly inadequate. As stated in the report for raising the east bank at 163rd mile, the raising of the bank is necessary owing to the very heavy wave action the bank has to stand from the sea. M.F.L. in canal has nothing to do with the matter, the experience of last November showing that in heavy gales waves from the sea are liable to dash right up to and over the present bank. As regards the margin above M.F.L. required to the right flood bank of the Manneru river, it is only necessary to point out—

(1) That the river is here forced round a tremendous curve, and that in the deep pocket thus formed the water is liable to head up to a great extent.

(2) That the river has an undoubted and increasing tendency to break out to its old bar at mile 159.

(3) That the old bank formerly existing had the same margin (*vide* paragraph 3 of report to estimate) as that allowed for in the estimate now sent, and yet the bank repeatedly breached.

(4) That the river spills over its border in every flood and rushes down a steep incline, through old lines of spill, straight on to the line of flood bank, which is carried right across old lines of spill to the sea. This evil is inevitable, since to put the flood bank on the river's border would simply result in the bank being breached by the excessive erosion to the border that occurs in every flood.

(5) That the tendency of the river to throw nearly its whole flood discharge on to its right border is increasing every year, and therefore the pocket becomes deeper and more eroded every year.

3. I request, for the above reasons, very early sanction to the estimates already submitted, as they provide for nothing more than is absolutely necessary. They were carefully considered both by Mr. Martin, the late Superintending Engineer, and myself, and the works should be finished before 15th October next. It is a very difficult matter, without incurring heavy outlay, to put things in a satisfactory state at the Manneru river, and I have not advocated spending any money there beyond what I am convinced by experience is necessary.

4. The estimate for raising the west bank of canal in 163rd mile provided for carriage of earth by punts from the Kistna—*vide* paragraph 2 of report. These are now on the spot and will have to be returned when the Kistna canals reopen in June. There are not sufficient punts in this division to enable earth to be boated, and earth will consequently have to be carried and the cost of the work be very largely increased, unless sanction is now given to start the collection of materials forthwith with the punts sent from the Kistna.

No. 24 B.C.

Forwarded to the Chief Engineer for Irrigation.

2. The estimate for raising the east bank at 163rd mile provides only for raising the bank by 2 feet, experience having shown that this is necessary to ensure its safety during the prevalence of gales from the sea as stated in the report to the estimate.

3. Having regard to the fact that the old right flood bank to the Manneru has repeatedly breached as reported in letter No. 4 C., dated 20th November 1892, from the Executive Engineer to the Superintending Engineer, II Circle, and letter No. 5 C., dated 16th December 1892, from the Superintending Engineer, II Circle, to the Irrigation Chief Engineer, and that the height now given is the same as that given to the old bank, it seems advisable that the new flood bank be given a height of 6 feet above calculated M.F.L., the latter, in the special circumstances reported by the Executive Engineer, being probably a very uncertain figure.

4. If the original estimates are approved, it is advisable that authority be given by telegram to the Executive Engineer to start the boating of earth for raising the canal east bank in 163rd mile—*vide* paragraph 4 of his letter.

(Signed) A. S. RUSSELL,
Ex. Engr., in charge II Circle.

20th April 1894.

No. 68 I.

Submitted to Government.

2. In this office memo. No. 22 B.C., dated 1st instant, the Superintending Engineer, II Circle, has been informed that work may be started in anticipation of sanction to the estimates.

(Signed) R. R. E. DRAKE-BROCKMAN, Lt.-Col., R.E.,
Chief Engineer for Irrigation.

7th May 1894.

ORDER—dated 25th May 1894, No. 415 I., Public Works.

The following estimates are sanctioned from the balance of the amount reserved for unforeseen works of the Buckingham canal, which will then be reduced to Rs. 1,01,375 :—

Irrigation.
43. Minor Works and Navigation.
Minor Works for which Capital and Revenue Accounts are kept.
Capital Account.
Buckingham Canal.
Northern Portion.
I. Works.
2. Main Canals and Branches.
12. Earthwork.

	RS.
1. Raising new east bank of canal at 163rd mile, estimate	2,330
2. Forming a flood bank on the Manneru river right border, estimate.	7,650

2. This sanction is registered as No. 30 I. of 1894–95.

(True Extract.)

(Signed) R. R. E. DRAKE-BROCKMAN, Lt.-Col., R.E.,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Chief Engineer for Irrigation.
" Superintending Engineer, II Circle.
" Executive Engineer, Buckingham Canal Division, with six enclosures.
" Examiner, Public Works Accounts.
" Revenue Department.

IRRIGATION.
ACCOUNT.

Govt. of {1894} Madras.

PUBLIC WORKS.

Dated May, 25th.

Recd. *Encl.*

G.O., 25th May 1894, No. 415 I.

MAY.

Buckingham Canal

Estimate of Rs. 2,330 for raising new east bank of canal at 163rd mile and of Rs. 7,650 for forming a flood bank on the Manneru river right border, —, sanctioned.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

READ—the following paper :—

From G. P. CARLESS, Esq., Executive Engineer, Madura Division, to the Superintending Engineer, VI Circle, dated 3rd May 1894, No. 79 S.E.

I have the bonour to state that a grant of Rs. 2,04,000 has been allotted to No. II Periyár division in the preliminary issue of the budget for 1894–95 as modified by paragraph 3 of G.O., No. 247 I., dated 13th March 1894, as per details in the margin against which Rupees 549–9–7, or in round numbers Rs. 550, have been spent in that division up to the 14th instant, and to request that the balance, viz., Rs. 2,03,450, may be transferred to the combined Madura division.

		RS.	A.	P.
Grant.				
49. Irrigation including land, tools and plant and establishment.		2,00,000	0	0
43. Minor Works not kept, P.W.D.		4,000	0	0
Total ..		2,04,000	0	0
Expenditure to end of 14th April 1894.				
49. Irrigation		557	5	10
Deduct—	RS. A. P.			
Refunds of tools and plant	3 4 0			
Receipts on Capital Account	4 8 3			
		7	12	3
Net outlay ..		549	9	7
Or in round numbers ..		550	0	0
Balance available for transfer ..		2,03,450	0	0

No. 122 M.D.

Copy submitted to the Chief Engineer, Public Works Department, through the Examiner, Public Works Accounts, for orders.

2. It is believed that in the final issue of the budgets the requisite transfer to the Madura division of the grants for the late No. II Periyár division will be made.

TRICHINOPOLY,
4th May 1894.

(Signed) O. V. BODDY, Major, R.E.,
Suptg. Engineer, VI Circle.

No. 1864 D.

Forwarded to the Chief Engineer for Irrigation for favour of necessary action.

(Signed) W. F. O'DONOGHUE,
Offg. Examr., Public Works Accounts.

9th May 1894.

ORDER—dated 28th May 1894, No. 418 I., Public Works.

A sum of Rs. 550, distributed as shown in the margin, is transferred from the current year's grant for the Madura division under "49. Capital Expenditure not charged to Revenue" to cover the outlay reported to have been incurred in the late No. II Periyár division under the same head.

	RS.
Works	447
Establishment	103
Total ...	550

(True Extract.)

(Signed) J. PENNYCUICK, Colonel, R.E.,
Secretary to Govt., P.W.D.

To the Chief Engineer for Irrigation.
" Superintending Engineer, VI Circle.
" Examiner, Public Works Accounts.

IRRIGATION.
ACCOUNT.

Govt. of {1894} Madras.

PUBLIC WORKS.

Dated May, 28th.

Recd. *Encl.*

G.O., 28th May 1894, No. 418 I.

MAY.

The late No. II Periyar Division

Rs. 550 transferred from the current year's grant for the Madura division under "49. Capital Expenditure not charged to Revenue" to cover outlay incurred in — under the same head.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.

READ—the following paper :—

Proceedings of the Board of Revenue (Land Revenue), dated 7th April 1894, Mis. No. 1869.

Read—the following letter from J. N. ATKINSON, Esq., Acting Collector of Kistna, to the Secretary to the Commissioners of Land Revenue, dated Masulipatam, 22nd January 1894, Ref. on C. No. 3837-Ver. :—

Under section 7 of the Madras River Conservancy Act No. VI of 1884, I have the honour to forward to your address the charts and registers prepared by the Superintending Engineer, II Circle, for the Kistna river in this district.

2. A notice was published in the District Gazette, dated 14th July 1893, informing the public that charts and registers had been prepared and lodged in the Collector's office and that they were available for inspection during office hours for a period of 90 days from the date of the publication of the notice in the Gazette. The public were also informed that the Collector was prepared to receive objection petitions from any person or persons desiring to raise objections to the boundaries or land marks set forth in the above charts. A few ryots inspected the charts and registers, but none presented objection petitions.

3. I have, therefore, the honour to request that the Board will be good enough to forward the charts and registers to Government.

Reference thereon, dated 26th February 1894.

The Collector is requested to forward the registers and charts referred to in the letter read above, as they have not yet been received in this office.

Read—the following letter from J. N. ATKINSON, Esq., Acting Collector of Kistna, dated 10th March 1894, Dis. No. 858-Ver. :—

Adverting to Board's reference on Subte. No. 556 of 1894, dated 26th February 1894, I have the honour to report that the registers and charts will be sent on board the next steamer in three packets.

2. They have been delayed by the carpenter who is making the cases.

3. The keys of the chart, 3 in number, are also forwarded in a registered cover.

Read—the following letter from the same officer, dated 21st March 1894, Dis. No. 1003-Ver. :—

I have the honour to forward, herewith, the original of the invoice I received from the Port officer regarding the charts and registers referred to in my Dis. No. 858-Ver. of 10th March 1894.

Resolution—dated 7th April 1894, Mis. No. 1869.

The charts and registers received from the Collector of Kistna will be submitted to Government with reference to section 7 of the Madras River Conservancy Act VI of 1884.

(A true Copy and Extract.)

(Signed) L. M. WYNCH,
Secretary.

Mis. No. 1545, Revenue.

Transferred to the Public Works Department.

OOTACAMUND,
20th April 1894.

(Signed) E. GIBSON,
Ag. Secy. to Government.

ORDER—dated 29th May 1894, No. 420 I., Public Works.

His Excellency the Governor in Council is pleased to approve finally the charts and registers of the Kistna river in the Kistna district, no one having raised any objection thereto after due notice was given that they were lodged in the Collector's office and available for inspection.

2. The Superintending Engineer, II Circle, will, in communication with the Collector of the Kistna district, suggest proposals for appointing river conservators and fixing their jurisdictions and for such rules as may, under section 22 of Act VI of 1884, be considered necessary for carrying out the provisions of the Act.

3. The following notification will be published in the *Fort St. George Gazette* and in the *Kistna District Gazette* in three consecutive issues :—

"His Excellency the Governor in Council is pleased to declare, under section 7 of the River Conservancy Act (VI of 1884), that the provisions of the said Act shall, from 1st September 1894, apply to the Kistna river within the boundaries and limits prescribed in the charts and registers deposited in the office of the Collector of the Kistna district."

(True Extract.)

(Signed) R. R. E. DRAKE-BROCKMAN, Lt.-Col., R.E.,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Chief Engineer for Irrigation.
" Superintending Engineer, II Circle.
" Examiner, Public Works Accounts.
" Revenue Department.
" Legislative "
" Superintendent, Government Press.

IRRIGATION.

Govt. of {1894} Madras.

PUBLIC WORKS.

Dated May, 29th.

Recd. *Encl.*

G.O., 29th May 1894, No. 420 I.

MAY.

River Conservancy Act

Orders approving finally the charts and registers of the Kistna river in the Kistna district, and inviting proposals from the Superintending Engineer, II Circle, in view to the — being brought into force in the district with effect from 1st September 1894.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

READ—the following paper :—

From Colonel A. T. FRASER, R.E., Superintending Engineer, III Circle, to the Chief Engineer for Irrigation, dated Bellary, 17th May 1894, No. 403.

In continuation of my No. 6 C., dated 27th April 1894, I have the honour to enclose copy of a letter from Messrs. Rickie and Co., Bangalore, forwarded by the Executive Engineer, Cuddapah, offering an 8 H.P. Rushton and Proctor engine and 7″ Gwynne's pump with belt fittings, &c., for the Sagiléru works at Rs. 3,400 and to request sanction to the purchase so that the foundation work may proceed.

2. The additional engine will allow of the one already obtained being stripped of defective working parts and these being sent to Bangalore for repairs.

3. The Executive Engineer has pointed out that the plant required by the scheme will cost more than the sum provided in the estimate.

4. I am instructing him to only charge at present half cost of each item to the estimate and to prepare a *tools and plant estimate* for the other moiety.

5. On conclusion of the work the plant can be either transferred or sold off and the Sagiléru scheme credited with its share of the proceeds.

ENCLOSURE.

From Messrs. RICKIE AND CO., Bangalore, to the Executive Engineer, Cuddapah, dated 2nd May 1894.

We duly received your favour of the 27th ultimo and regret late reply owing to the absence of our Mr. R. Rickie from Bangalore. We took the earliest opportunity to wire to you that we had a portable engine double cylinder, 8 H.P., by Rushton and Proctor. We are engaged now and have been for some time past giving this engine a thorough overhaul and supplying the boiler with new tubes. The engine will be ready for delivery in two weeks' time from this date. We have a 7″ Gwynne's centrifugal pump with foot valve which the above engine is quite capable of working up to a lift of 25 feet, delivering 60,000 gallons per hour. We have used this pump ourselves in supplying the Bangalore Cantonment Municipality with water in 1892 and it did excellent work. If you object to a 7″ we can obtain within 10 days a 6″ one for Rs. 500. The price of the engine with 7″ pump, foot valve and connecting piece to pump is Rs. 3,400 only. We shall also undertake to supply free a reasonable length of suction pipe on hearing from you the length you require, all delivered into trucks at Bangalore city. To the boiler engine and pump shown in the illustrated advertisement you so kindly sent us, we beg to point out that the boiler is liable to catch the ground in going over rough roads; the belt is much too short to be effective; you cannot use this pump on soft grounds unless perhaps with a long length of suction piping. For a 7″ pump we recommend at least 50 feet of belting. With a portable engine and pump separate, you can take the pump to any convenient place where you might not be able to take the engine boiler and pump combined. We are making these suggestions for what they are worth, as you may not have any of the difficulties we mention to contend with.

ORDER—dated 30th May 1894, No. 424 I., Public Works.

The purchase of the engine and pump with belt fittings, &c., from Messrs. Rickie and Co., Bangalore, for Rs. 3,400 is sanctioned.

2. As the provision of Rs. 3,248 made for tools and plant in the revised estimate for the Sagiléru project, sanctioned in G.O., No. 10 I., dated 9th January 1894, is inadequate, the Superintending Engineer, III Circle, will submit as soon as possible, for the sanction of Government, a revised estimate providing for all requirements under that head. The whole cost of the machinery and tools required should be charged to the project in the first instance, any recovery which may be realized after its completion either by sale or transfer being treated as reduction of expenditure under "Receipts on Capital Account" in accordance with paragraph 71 A., Chapter XIII, Public Works Department Code.

(True Extract.)

(Signed) R. R. E. DRAKE-BROCKMAN, Lt.-Col., R.E.,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Chief Engineer for Irrigation.
" Superintending Engineer, III Circle, with one enclosure.
" Examiner, Public Works Accounts.
" Revenue Department.

IRRIGATION.
ACCOUNT.

Govt. of {1894} Madras.

PUBLIC WORKS.

Dated May, 30th.

Recd. *Encl.*

G.O., 30th May 1894, No. 424 I.

MAY.

Engine and Pump

The purchase of an 8 H.P. Rushton and Proctor — with belt fittings, &c., from Messrs. Rickie and Co., Bangalore, for Rs. 3,400 for the Sagiléru works, sanctioned with remarks.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

TABULAR STATEMENT OF MISCELLANEOUS PROCEEDINGS AND MATTERS OF ROUTINE,

IRRIGATION,

FOR THE MONTH OF MAY 1894.

Subjects.	Number and Date of Order.	Numbers and Dates of previous Orders.
Land required for the Ichchhápuram, channel.—Notification for the acquisition of —, Ganjám district, ordered to be published in the *Fort St. George Gazette.*	4th May 1894, No. 368 I.	......
Objectionable items statement —Orders on — for January 1894 for the II Circle.	7th do. do. No. 373 I.	11th April 1894, No. 333 I. 27th Feb. 1894, No. 184 I.
Objectionable items statement.—Orders on — for February 1894 for the V Circle.	9th do. do. No. 377 I.	16th April 1894, No. 337 I. 8th March 1894, No. 219 I. 13th Feb. 1894, No. 125 I. 26th Jan. 1894, No. 78 I. 9th Dec. 1893, No. 1086 I.
Kondagai channel, Madura division.—Letter from the Superintending Engineer, VI Circle, reporting the adverse decision of the District Munsif in suit for recovery from Government of portion of expenditure incurred by Mr. Fischer in repairs to the —, referred to the Government Pleader for opinion.	10th do. do. No. 379 I.	......
Tanks irrigating 50 acres and less.—Proceedings, Revenue Department, for issue of standing order on the subject of — being handed over to ryots on certain conditions, communicated to Superintending Engineers.	11th do. do. No. 380 I.	......

Subjects.	Number and Date of Order.	Numbers and Dates of previous Orders.
Objectionable items statement.—Orders on — for February 1894 for the I Circle.	11th May 1894, No. 381 I.	21st April 1894, No. 340 I. 4th April 1894, No. 307 I. 20th Feb. 1894, No. 164 I. 29th Jan. 1894, No. 82 I.
Progress Reports, Nos. I and II Periyár divisions.—E. form — for March 1894, ordered to be forwarded to the Government of India.	11th do. do. No. 388 I.	......
Forwarded	11th do. do. No. 389 I.	......
Land.—Notification for acquisition of — for Eastern channel, 3rd section, Sangam anicut system, ordered to be published in the *Fort St. George Gazette.*	16th do. do. No. 392 I.	23rd July 1887, No. 440 I.
Objectionable items statement.—Orders on — for February 1894 for the III Circle.	16th do. do. No. 394 I.	16th April 1894, No. 336 I. 16th March 1894, No. 251 I. 13th Feb. 1894, No. 126 I. 26th Jan. 1894, No. 79 I. 15th Dec. 1893, No. 1101 I. 17th Nov. 1893, No. 992 I.
Land.—Notification for the acquisition of — required for distributary No. 14, Rushikulya canal, Ganjám district, ordered to be published in the *Fort St. George Gazette.*	17th do. do. No. 395 I.	4th Sept. 1890, Nos. 482–83 I.
Land.—Notification for the acquisition of — required for Nalluru channel, Répalle taluk, Kistna delta system, ordered to be published in the *Fort St. George Gazette.*	17th do. do. No. 396 I.	21st Sept. 1891, No. 733 I.
Land.—Notification for the acquisition of — required for the Rushikulya canal, Ganjám district, ordered to be published in the *Fort St. George Gazette.*	17th do. do. No. 397 I.	......
Land.—Notification for the acquisition of — required for the straight cut, &c., in Perumalkulam tank, Madura district, ordered to be published in the *Fort St. George Gazette.*	17th do. do. No. 398 I.	......
Land.—Notification for the acquisition of — required for widening the Periyár main channel, 1st reach, Madura district, ordered to be published in the *Fort St. George Gazette.*	17th do. do. No. 399 I.	......
Objectionable items statement.—Orders on — for February 1894 for the VI Circle.	18th do. do. No. 400 I.	23rd April 1894, No. 341 I. 20th March 1894, No. 264 I.

Subjects.	Number and Date of Order.	Numbers and Dates of previous Orders.
Objectionable items statement.—Orders on — for February 1894 for the IV Circle.	18th May 1894, No. 401 I.	21st April 1894, No. 339 I. 4th April 1894, No. 308 I. 2nd March 1894, No. 198 I.
Land.—Notification for the acquisition of — for the Periyár works, Madura district, ordered to be published in the *Fort St. George Gazette.*	19th do. do. No. 403 I.	......
Land.—Notification for the acquisition of — required for scarping the padugai in front of the 6-vent surplus in the Cauvery left bank, Ullikadai village, Tanjore district, ordered to be published in the *Fort St. George Gazette.*	22nd do. do. No. 404 I.	......
Land.—Notification for the acquisition of — required for Dokiparru affluent at Dokiparru in Gudiváda taluk, Kistna district, ordered to be published in the *Fort St. George Gazette.*	22nd do. do. No. 405 I.	......
Periyár Project Works.—Progress report of the — for April 1894 from the Superintending Engineer, VI Circle, recorded.	23rd do. do. No. 412 I.	......
Progress reports of Nos. I and II Periyár divisions.— E. form — for the month of April 1894, ordered to be forwarded to the Government of India.	28th do. do. No. 416 I.	......
Forwarded	28th do. do. No. 417 I.	......
Land.—Notification for the acquisition of — required for closing breaches in Rajakah channel in Vellakulam, North Arcot district, ordered to be published in the *Fort St. George Gazette.*	29th do. do. No. 419 I.	......
Land.—Notification for the acquisition of — required for a flood bank for the Neelanagram channel in the Vizagapatam district, ordered to be published in the *Fort St. George Gazette.*	30th do. do. No. 421 I.	......
Land.—Notification for the acquisition of — required for excavating Gopavaram channel, Gódávari district, ordered to be published in the *Fort St. George Gazette.*	30th do. do. No. 422 I.	......
Land.—Notification for the acquisition of — required for the Rushikulya works, ordered to be published in the *Fort St. George Gazette.*	30th do. do. No. 423 I.	4th Sept. 1890, Nos. 482–83 I.
Investigation of irrigation projects in the upland taluks of Kistna.—Stating that the subject of stoppage of — is under correspondence between the Board of Revenue and the Chief Engineer for Irrigation.	30th do. do. No. 425 I.	......
Dasabandam tank, Reddikunta, Cuddapah taluk.— Proceedings, Revenue Department, sanctioning abandonment of the —, recorded.	30th do. do. No. 426 I.	......